



PROSTHODONTIA

Fixed Bridgework.*

By HART J. GOSLEE, D.D.S.,
Chicago, Ill.

Inlay Attachments.

A still more radical method, in so far as the destruction of the remaining crown is concerned, is involved in the employment of various forms of "inlays" as attachments for the support of bridges.

In view of the apparent tendency toward this class of work, particularly in the filling of teeth, it would seem that such attachments are undoubtedly destined to occupy a more or less prominent sphere of usefulness, and, indeed, as applied to supporting small bridges of two or three teeth, or to supporting one end of even more extensive pieces, they may often be successfully used.

Indications. The indications for the employment of this class of attachments may be regarded as being more or less general, in proportion as the conditions may seem favorable; and, while they may be applied to almost any tooth in the arch except perhaps the lower incisors, they are more readily applicable to pulpless teeth; or to those teeth where devitalization of the pulp for the purpose of making suitable cavities may seem warrantable, or where cavities or fillings involving the approximal surfaces adjacent to the missing teeth are already present.

Requirements. As the most successful application of such attachments usually demands a more extensive destruction of the natural crown than is required for any other similar form of anchorage, the removal of the pulp is usually

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necessary as a means of properly preparing the crown for the reception of an inlay which may not only be properly adapted, but which may also offer sufficient strength to insure a reasonable degree of permanency.

While the removal of the pulp in anterior teeth, where the natural crown is to be preserved, may possibly be condemned because of the subsequent discoloration which *may* result, yet such a discoloration is invariably the fault of the operator, more than of the procedure, and may usually be avoided if the proper precautions are observed.

In molar and sometimes in bicuspid teeth having crowns of *good proportions*, however, and where the ravages of decay have already resulted in cavities of more or less favorable shape, size and position, adequate preparation may possibly be obtained without encroaching upon the pulp or otherwise exercising an influence injurious to its vitality.

In such instances, devitalization may not be necessary, but, as the

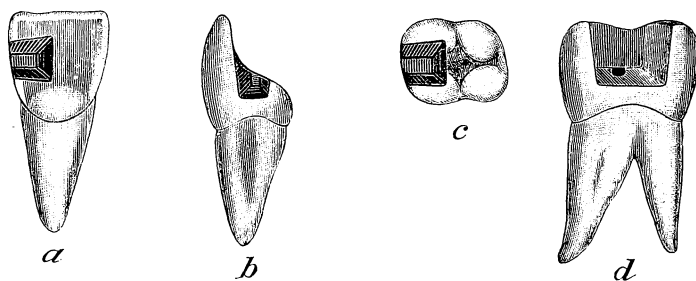


Fig. 254.

inlay must involve the *contact point of the natural crown* to such extent as to bring all of its margins to a *self-cleansing area*, and must then be of such shape as to be *mechanically retained* in the cavity, and of such proportions as will *insure strength in its attachment*, it will usually be found that the removal of the pulp is either advantageous or imperative.

The success of this method of attachment will depend largely upon cutting, or enlarging, the cavity until it involves such proportions as will bring all margins to a self-cleansing area—or to a point on all surfaces beyond that of contact with the adjacent artificial tooth which is to be supported—and, to such as will also insure adequate mechanical fixation and strength in the inlay.

The requirement of mechanical fixation demands resistance to stress in a direction tending to dislodge it; and that of strength demands that it be of considerable size. Hence, when the employment of this method

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seems indicated conservation of tooth structure is second in importance to the stability and permanency of the attachment.

Generally speaking, the cavity must also possess a flat base, from which the axial margins should be trimmed at right angles, or slightly diverging toward the periphery. It should then be *free from vertical undercuts* which would preclude the insertion and removal of the inlay, and have *smooth definite* margins, such as will make possible and insure a close and accurate adaptation.

To further fortify the attachment against the possibility of dislodgment, when subjected to stress, the insertion of a *short, stout* dowel is recommended wherever possible. If the depth of the cavity is sufficient, and its formation provides such mechanical resistance to stress as will preclude dislodgment, the employment of a dowel is, of course, not necessary, yet these requirements are usually best met by its use.

Such cavity preparation in two typical classes of cases involving the

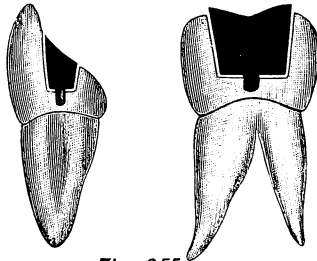


Fig. 255.

linguo-approximal surfaces of anterior teeth, and the approxino-occlusal surfaces of posterior teeth is illustrated in Fig. 254.

Construction. When the cavity has been thus formed, a matrix of pure gold 36 or 38 gauge (or of platinum foil 1-1000 if preferred) should be closely adapted to all surfaces and margins. This may be accomplished directly in the cavity with pledgets of cotton, or of spunk, and suitable burnishers. Or, an impression may be taken with gutta-percha or cement; a die of cement or amalgam made from this, and the preliminary adaptation secured by swaging with the Brewster, or other soft-rubber plunger swaging devices, but even in the latter method the final adaptation should be made to the cavity itself.

When the matrix has been properly adapted, the surplus should be trimmed away until only a narrow margin remains, and if a dowel is to

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be employed the matrix should be removed and the cavity at this time deepened root-wise, at the desired point, for its reception. In this, care must be exercised to have a small, stout dowel pass but a short distance into the pulp chamber, and at right angles with the floor of the cavity, so as to prevent its presence from interfering with the removal and ready replacement of the completed inlay.

The matrix should now be filled with soft wax (because of its easy removal afterward) to preserve its shape and sustain the relation between

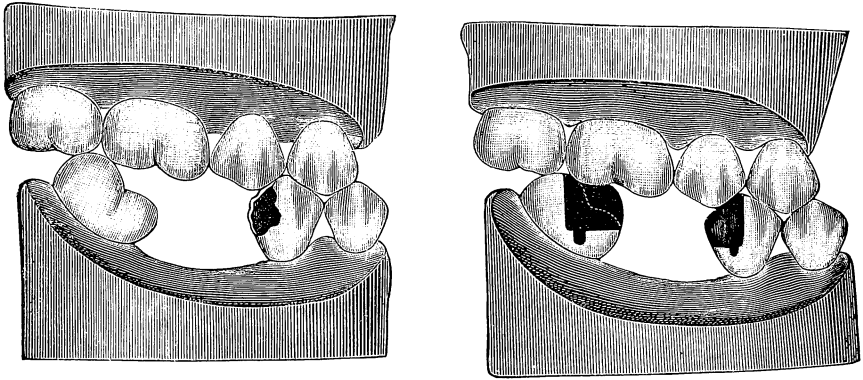


Fig. 256.

it and the dowel; detached from the tooth; invested, and subsequently filled to the desired contour, first with *globules* of scrap gold, and then with 20 K. solder, after the investment has become hard and the wax removed.

While the best results are doubtless to be obtained from the use of pure gold of the gauge mentioned for the matrix, and by contouring in this manner, some prefer to use platinum foil. The extreme thinness of the latter diminishes the work incident to the final finishing upon the tooth, but increases the tendency to become distorted in shape in removing and investing. To prevent the latter, Dr. C. C. Allen, of Kansas City, has suggested filling the matrix before removing with *gum camphor*, which may be burned out easily after investing, or a medium hard wax may be used, for the same reason. The adjustment of an ordinary circular matrix to restore the approximal wall, and the filling of the entire matrix for the inlay with crystal gold previous to subsequently investing and finishing with solder, is also recommended and may be found useful.

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When the contouring of the inlay by either of these methods has been completed, it should be placed in position in the cavity and finished with stones and disks until the desired adaptation and a proper occlusion has been obtained, when the final "bite" and impression should be taken.

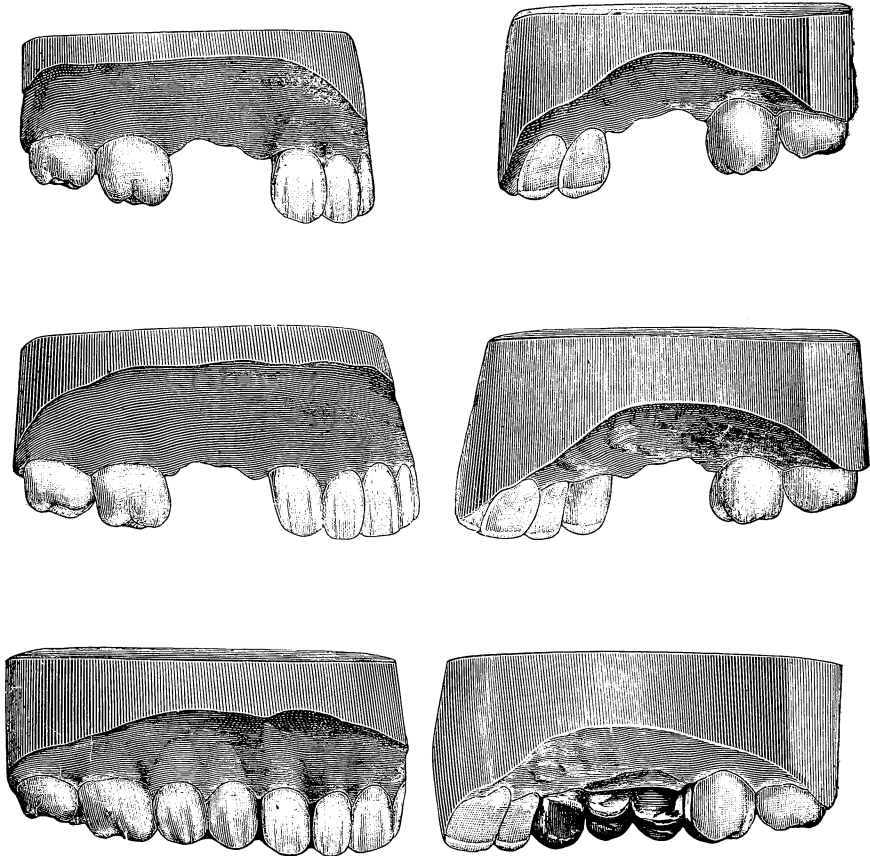


Fig. 257.

The completed inlays for the typical cavities previously illustrated are shown in Fig. 255.

A class of cases in which molar teeth have tipped forward until their occlusion is destroyed, which are encountered frequently, and particularly in the lower arch, and to which this method of attachment is especially

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applicable as a means of affording anchorage for a bridge, and at the same time of restoring the occlusion, is illustrated in Fig. 256.

Another class of cases involving the employment of the "inlay" attachment on the posterior end, in conjunction with the "plate and pin" attachment on the anterior end, is illustrated in Fig. 257. The application of each attachment in its respective place is typical, and, next to full crowns, this is regarded as being one of the best, most practical and highly artistic means of supplying missing bicuspid.

Telescope Attachments.

The telescope attachment is sometimes employed upon the molar and bicuspid teeth in the shape of partial gold crowns, involving only the occlusal one-half or two-thirds of the natural crown.

Indications. While this method requires but a small amount of preparation to the natural crown, and may be useful in instances where the attachment is not conspicuously visible, where the teeth so employed stand alone, and without opposition from occluding teeth, in the arch, or where only a more or less temporary structure is required, still at best they are indicated as an expediency rather than as a general practice.

As they are not intended to pass beyond the most bulbous portion of the natural crown, about the only preparation necessary to their adjustment is the removal of enough of the occlusal surface to admit of cusps of sufficient thickness to withstand any stress of mastication to which they may be subjected.

For this reason their employment is usually confined to teeth having vital pulps and where it seems desirable to preserve this vitality, for, if the pulp should or may be sacrificed, there would be no apparent reason for not properly preparing all surfaces of the natural tooth and adjusting the usual style of artificial crown to it.

Hence the use of such an attachment can only be regarded as a means to an end, and the end is to save the pulp; but if a fixed bridge is indicated at all, this objective point is secondary to its fixation in the most secure and permanent manner possible.

Possible Objections. On the other hand, however, they may be useful as a means of supplying missing teeth in the mouths of very young patients, where, because of the lack of root development, it may not seem warrantable to devitalize the pulp or to subject the tooth to the shock of more extensive preparation such as would be indicated for a complete crown.

In these instances such attachments would be expected to serve, in

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the main, but a temporary purpose, and thus only defer a more permanent procedure until a more favorable time.

Construction. Whenever indicated this style of attachment, which is illustrated on the molar teeth in conjunction with "inlay" attachments on the bicuspids, in Fig. 258, should be constructed in accordance with the general requirements previously outlined for a full crown, excepting, of course, that any peripheral preparation of the natural crown is unnecessary.

For prophylactic reasons it should be observed, however, that the surface of the attachment which approximates the adjacent artificial tooth

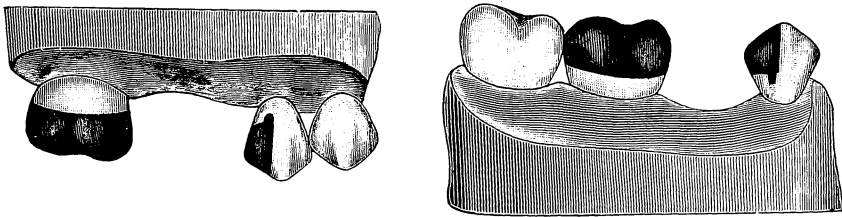


Fig. 258.

be allowed to extend sufficiently far beneath the contact point with the latter, so as to leave a free interproximal space, and thus make it more or less self-cleansing.

Temporary Attachments.

Incident to the correction of irregularities of the teeth, the modern scientific practice of orthodontia and the recognized importance of a full complement of teeth in the restoration or preservation of the normal occlusion, not infrequently demands the application of some form of dental bridgework to the mouths of *young* patients, as a means of supplying missing teeth, and of, perhaps, temporarily, but securely, retaining the natural teeth in their proper position.

Indications. The exigencies and varied requirements of such cases, together with the unfavorable age of the patient, however, usually indicates the employment of appliances which may be securely "fixed" to the supporting teeth, and yet in the mouths of patients under fourteen or fifteen years of age no effort toward a radical procedure which would materially mutilate the natural teeth is usually indicated or should be attempted, because of the

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more or less imperfect development of the roots, and of the difficulties otherwise involved in the procedure.

In such cases the missing teeth should usually be supplied in the most simple manner possible until such time, at least, as the environment and conditions may be more favorable for securing a greater degree of permanency.

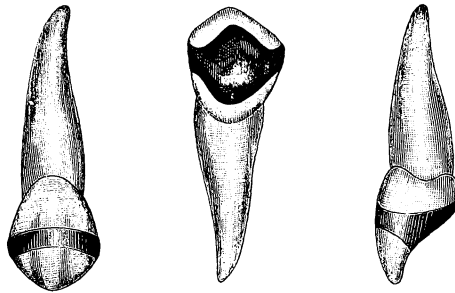


Fig. 259.

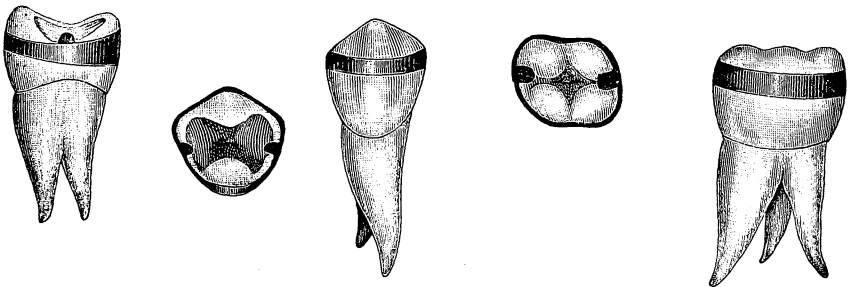


Fig. 260.

Up to the age of perhaps fifteen or sixteen, this would usually indicate the employment of simple bands as a means of attachment for the support of artificial teeth, and in their application care should be exercised to avoid any shock to the pulps of the teeth so employed, and to place such bands around the natural crowns at their largest circumference in order that no possible mechanical irritation may result.

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Application. In the application of such bands about 32 gauge 22 karat gold should be used, and in the adaptation to the anterior teeth the exposed labial portion may be made extremely narrow, but the lingual portion should cover enough of the natural crown to admit of the use of a sufficient quantity of cement in mounting to insure a degree of stability in the attachment which will prevent its being forced rootwise, or otherwise displaced (Fig. 259).

On the posterior teeth, however, a further precaution against such displacement should be observed by the addition of an *occlusal rest* as a part of the band (Fig. 260). In the event of the latter interfering with the occlusion accommodation must be made by grinding the tooth at these points, or the opposing teeth.

Appliances of this character are of course only temporary in nature, but when properly adapted and securely mounted with cement, they may support one or two teeth, and thus serve the desired purpose, until such time as a more radical preparation, and more permanent method of fixation, may be indicated.

While *removable* appliances may be employed in such cases, they are not so reliable, and are not usually to be recommended, because of the difficulty of learning to wear them; of the tendency to forget, misplace or lose them, or of the possibility of swallowing them.

Occlusal and Lingual Supports.

Whilst it is quite logical to suppose that attachments for bridges which are to be securely anchored to the teeth must, of necessity, be more or less permanently fixed in their relation to the supporting natural crowns, there are nevertheless instances where a simple *rest* or *support* may be found exceedingly useful, and where the judicious employment of such rest will answer practically the same purpose, as far as the requirements are concerned, as would any of the preceding methods of attachment.

Occlusal Supports. This is particularly true of a style of support which, because of being applicable mainly to the posterior teeth, and of then involving only the approximal and occlusal surfaces of the natural crown, may be properly designated as "occlusal" supports.

Indications. As there is a marked line of distinction between *anchorage* and *support*, and as all fixed bridges must be securely "anchored," the "judicious employment" of any style of "support" would necessarily mean that it could be used

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only in conjunction with one or more other methods of "anchorage" or attachment.

Hence, in small bridges where but one or two teeth are to be supplied, and where any of the preceding methods of attachment are used as the anchorage for one end, if the strength and stability of the attachment itself seems adequate to the requirements of anchorage, a simple support on the other end may be all that is required to insure reasonable permanency in the structure.

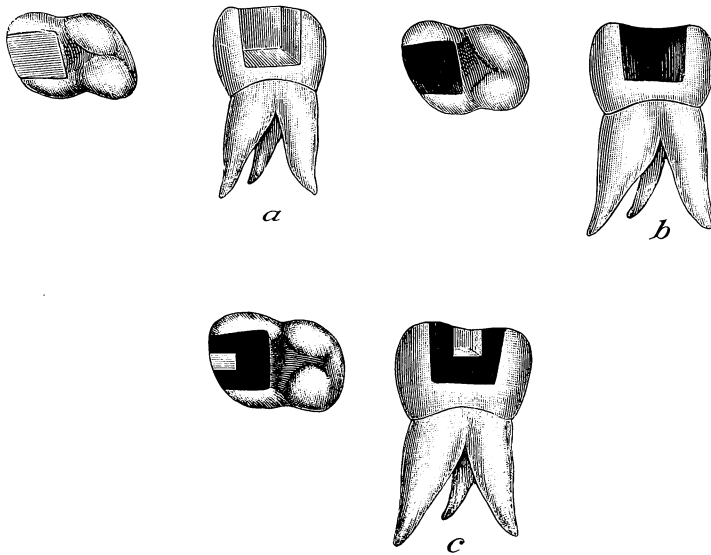


Fig. 261.

Also, in more extensive bridges involving *two or more attachments*, which seem to offer a stability adequate to the requirements, and yet where it may be desirable to extend *one*, or in some exceptional instances *two, teeth*, either anterior or posterior to one of the attachments, a simple support may answer for the extreme end of the extension.

Application. Such a support may be obtained, when indicated, in a manner which will require but comparatively little destruction of the natural crown thus used, and yet which will afford adequate resistance to *lateral* and *vertical* stress, and at the same time attain an esthetic effect, by making or utilizing a cavity in the approximo-occlusal surface of the natural crown (Fig.

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261, A); filling and finishing it in a permanent manner *first* (Fig. 261, B), and then cutting a seat in the center of the filling which will offer accommodation for the end of a suitable bar projecting from and forming a part of the bridge (Fig. 261, C).

For prophylactic reasons such a cavity must be extended sufficiently far so as to bring its margins to immune areas, and to such proportions as to admit of the subsequent cutting of a seat in the filling which *will not involve any of the margins*, and yet which will receive the projecting end of a *square* iridio-platinum wire about 16 gauge. When the filling is inserted, finished and polished, the seat may be cut in it with a cross-cut fissure bur of the same diameter as the wire to be used. This should be done after the other attachment, or attachments, is, or are, made, and then with them in position the wire should be fitted into the seat and

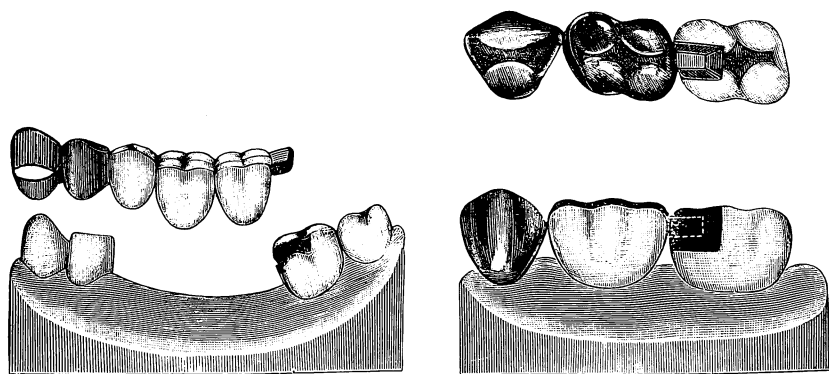


Fig. 262.

allowed to extend over until its other end rests against the attachment. When the proper relation is thus secured and insured the final "bite" and impression may be taken.

Dr. Ottolengui advocates the following method of constructing an occlusal rest. A filling is made and finished first, as already described. The slot or seat is then cut and is constructed with a flat bottom and very slightly flaring sides. Into this slot is then burnished a piece of thin pure gold which is brought into a close adaptation with a smooth flat end burnisher and a mallet. This gold is also carried over and burnished against the approximal surface of the filling extending slightly below the contact point. Into this is then fitted the iridio-platinum square post, the two waxed together, removed, invested and united with 20 karat solder. This is then returned to the mouth and fitted and soldered to the attach-

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ment, as already described in connection with the simple bar. The advantages claimed by Dr. Ottolengui are a firmer fitting rest, which not only makes a cleaner appliance, but being burnished also against the approximal surface, may be made to serve slightly as a lock, the finished piece snapping into place. The final finishing of the occlusal rest should be made with the piece in the mouth, so as to make it continuous with the filling in which it rests, and thus smooth to the tongue.

This projecting end need only rest firmly and snugly in position in the filling, and no effort should be made to attach it more securely than is thus to be obtained by such a fit. Indeed, if the fit of the projecting end of the wire into the seat in the filling is at all close it will rest quite firmly therein, thus supporting that end of the bridge against vertical and lateral stress, and the slight degree of mobility afforded will be found advantageous instead of objectionable. When used to support two teeth, however, where the leverage is so appreciably increased, it is usually a safe precaution against the possibility of loosening the attachment at the other end, to warn the patient to avoid the constant or too frequent use of hard, sticky substances.

While the advantages to be obtained from the employment of such a support are quite sufficient to even warrant the cutting of cavities in sound teeth, still the method is more particularly applicable when a cavity already presents. The typical application of this principle to the *support* of the posterior end of small bridges which are otherwise securely anchored, is illustrated in Fig. 262.

The former practice of extending projecting bars into cavities and of subsequently inserting the filling over and around them after mounting the bridge, has practically been abandoned, because of the extreme difficulty of making a permanent filling under such conditions, and of the consequently temporary nature of attachments made in this or a similar manner.

Lingual Supports.

In a preceding consideration of the underlying *principles* particular attention has been called to the necessity for employing some mechanical means of overcoming leverage *where one tooth is to be suspended from another*, and of thus preventing rotation of the supporting tooth on its long axis.

In so far as concerns the application of this principle to the construction of such bridges anterior to the second bicuspid this may be accomplished by the employment of what may be designated as a lingual support.

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Indications.

The indications for the employment of such supports are general as applied to the construction of bridges where a single tooth is suspended from a single attachment, anywhere anterior to and including the second bicuspid, for the reason that the roots of the incisors, cuspids and bicuspids are of more or less conical shape, and, hence, unless fortified against rotation, will invariably succumb to the power of the lever, and ultimately become so twisted on their long axis as to result in the presentation of a space between the suspended artificial tooth and the adjacent natural tooth, much as a gate

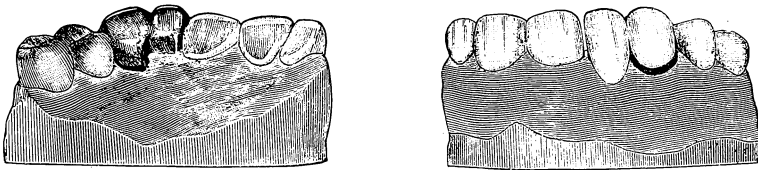


Fig. 263.

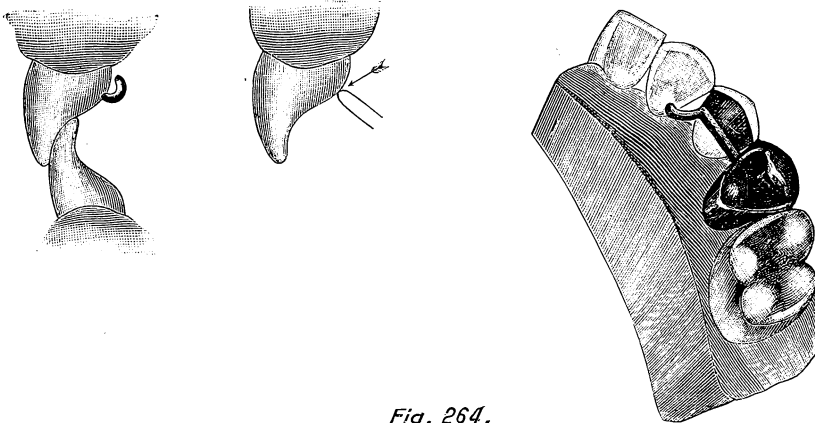


Fig. 264.

swings on its hinge from the direction in which the force is applied, and as is illustrated in Fig. 263.

Application.

In the application of such supports, however, their practicability or impracticability will depend largely upon the following conditions: *First*, an adjustment which will not interfere with the occlusion of the opposing teeth, nor impinge upon the soft tissues; *second*, an adjustment which will be sufficiently free from contact to maintain as nearly a *self-cleansing* space between it and the tooth and gum as possible; *third*, an adjustment

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which will afford only a *minimum* contact with the tooth against which it rests, and *fourth*, the possession of sufficient inherent rigidity to withstand the stress imposed (Fig. 264).

If these requirements are observed such supports need not afford much, if any, opportunity for the occurrence of caries at their point of contact with the natural crown; need not be appreciably unhygienic, nor an impediment to the movements of the tongue, or to speech.

In order that they may possess sufficient rigidity and strength, nothing smaller than 16 gauge round iridio-platinum wire should be used, and the adjustment may be made upon the model before the case is invested, or after it is invested if the following precaution is observed. When the individual attachment and dummy is completed and they are ready to be invested and united, the proper relation should be sustained with hard wax. A small quantity of soft wax should then be attached to the lingual surfaces of the pieces and pressed against the same surface of the adjacent tooth on the model. This will afford an impression of this surface of the tooth, so that when the case is detached from the model and invested,

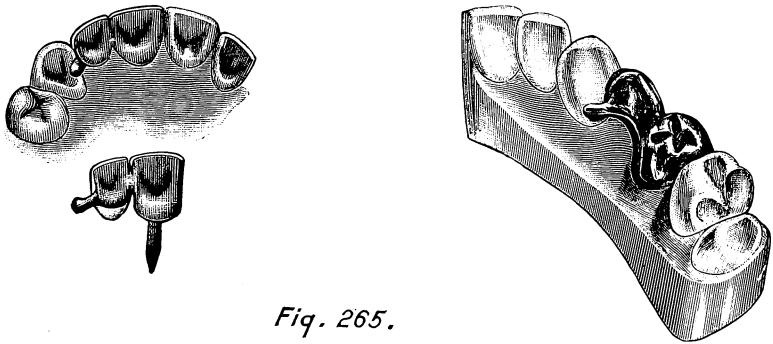


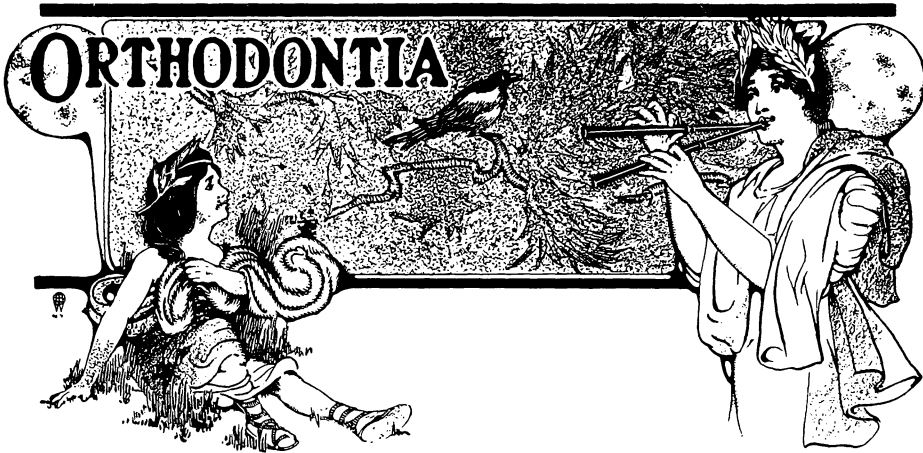
Fig. 265.

and the wax is removed, an accurate outline of this surface of the tooth against which the support is to rest, will present in the investment.

The support may then be adjusted, as indicated, placed in position, and the case heated and soldered.

In finishing, the end of the support should be nicely rounded down toward the tooth upon which it is to rest, and before mounting it should be observed that it offers no interference to the occlusion, and no unnecessary obstruction to the tongue.

The application of this class of supports showing their correct relation and possible effectiveness in such typical cases, for example, as a second bicuspid supporting a first bicuspid, and a central supporting a lateral, is illustrated in Fig. 265.



Orthodontia a Specialty.

By DR. A. H. KETCHAM, Denver, Col.

(Read before the Colorado State Dental Society, October, 1904.)

Our present age is conceded to be the most progressive of any along the lines of science and invention. Has not this been brought about by men who, becoming interested in some line of research or endeavor, have bent all energies to the finding of the truth, or, in other words, have become specialists? Would we ever have heard of Paderewski if he had tried to excel upon the organ, the violin, and the harp, as well as on the piano? Of Edison, if he had divided his time between steam and electricity; or would we have those beautiful reproductions of our grand, snow-capped mountains, with sunrise and sunset skies, if Mr. Adams spent an equal amount of energy upon painting people, animals and mountains?

Coming down the list to medicine and dentistry, we find medicine separated into many distinct specialties, each depending upon a broad knowledge of medicine as a foundation, and then endless hard work and study along the line selected. Yet twenty-five years ago we knew nothing of the oculist, the rhynologist or the gynæcologist.

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Dentistry is now following medicine and separating into distinct specialties. We have men who, after a liberal education and experience in general dentistry, are devoting their entire time and energy to such specialties as prosthodontia, crowns and bridges, ceramics, oral surgery and orthodontia. Having earnest men in each specialty seeking knowledge



Made from two upper jaws, showing a large amount of tooth tissue in the smaller jaw, A, and much less in the larger jaw, B.



C
Upper and lower jaws in occlusion.
Fig. 1.

and concentrating their whole energy upon one life-long effort, we are assured of the most rapid advancement along all lines. There are prominent men in our profession who say that there is only room for the practice of these specialties in a few of the larger cities. The same was said of medical specialties twenty years ago, yet now we find oculists and rhynologists in every small city or large town. I can say for orthodontia that malocclusion is as prevalent as faulty vision, while impairing

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health and beauty to a greater extent; so in the years to come, when dentists and the public realize the importance of good occlusion, I believe there will be as much demand for orthodontists as there now is for oculists.



Fig. 2.



From plaster cast, showing malocclusion of the teeth.



Profile view of face of person from whom the cast Fig. 3 was taken.

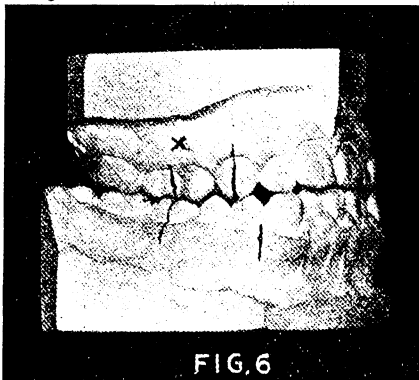
Fig. 3.

The Teaching of Orthodontia.

The teaching of orthodontia in our colleges, in the past, has been very crude; often it was entirely omitted from the lecture course, and when supplied was combined with another chair, receiving from half an hour to two or three lectures during the three years' course, such lectures being chiefly confined to descriptions of appliances, and the students were advised to extract to make room in the arch, thus creating a deformity in the attempt to correct another. Some-

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times they were told to wait until all the permanent teeth had made an appearance before attempting a case, or to name a prohibitive fee in order to get rid of the patient. Is it any wonder, then, that this, the most difficult branch of dentistry, should be shunned by the general practitioner?

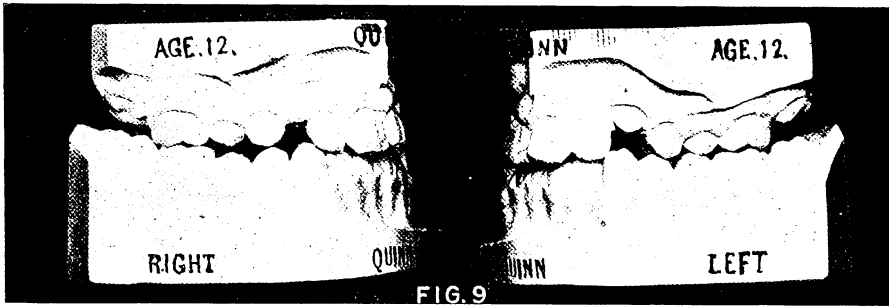
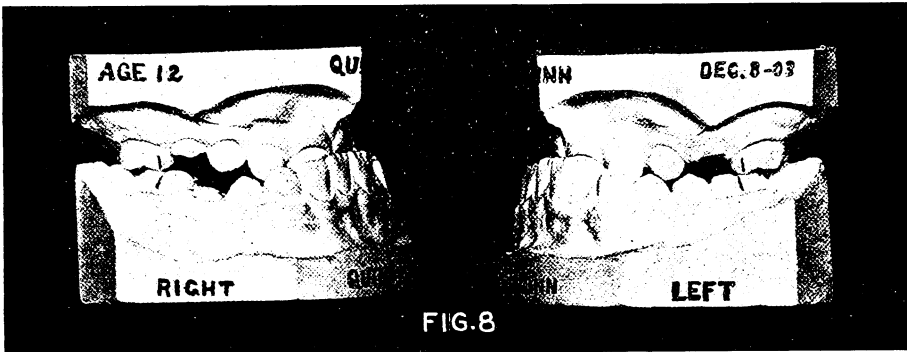


With your permission I will read a short extract from a paper by Dr. Edward C. Kirk, on "The Scientific Method in Dentistry," published in the January *Cosmos*:

"The practice of dentistry furnishes another conspicuous example of the value of the scientific as compared with the empirical method. Until within a very recent period the study of malpositions of the teeth was a

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chaotic and bewildering mass of detail. For two centuries at least the point of view was absolutely empirical in the study of this important department. Each case was a special problem, it was said, and as the expressions of malposition apparently varied with each case, ponderous tomes of many pages would scarcely contain the detailed descriptions of the methods and fixtures which have been successfully reported and advocated for their treatment. To those of us who came into dental practice



twenty-five years ago (and I would add twelve or fifteen years ago as well) the most discouraging problem was that presented by the department of orthodontia. The attempt to study orthodontia from the cases and appliances described at that time was not unlike the attempt to acquire a knowledge of the Chinese written language, where every word has its individual graphic symbol. It was a mass of detail with no connecting system or order. But in due course this confusing mass of data was made the subject of investigation in a methodical way. The scientific method was applied to its solution, and the underlying principle of the aberrations

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from normality in the positioning of the teeth was evolved in Angle's dictum that the problems of orthodontia are problems of malocclusion, and that the essential object of orthodontic treatment is restoration of the normal occlusion."

There is danger that in trying to cover too much ground our knowl-

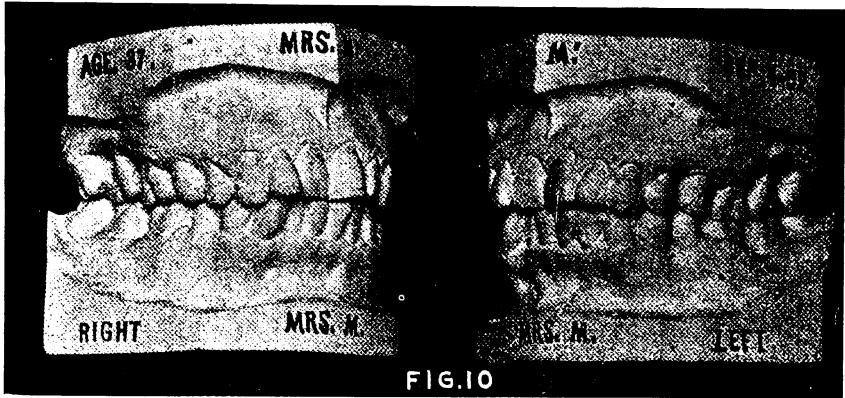


FIG. 10

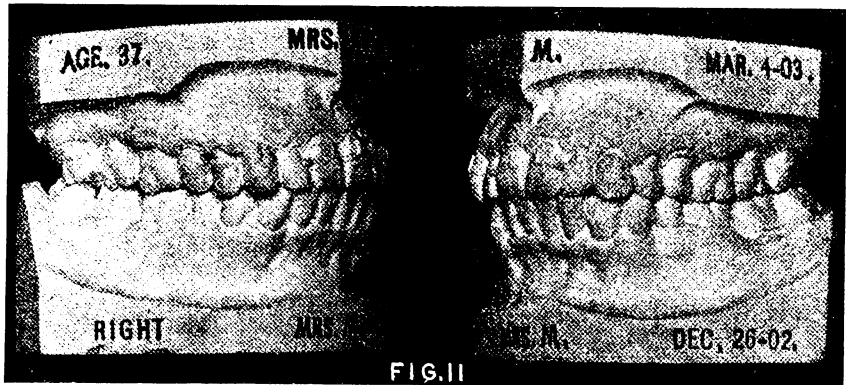


FIG. 11

edge may be thin in spots. One of our most prominent, if not *the* most prominent man, in anatomy of the head, and professor of oral surgery in one of our best colleges, in the September *Cosmos*, criticises the restoration of normal occlusion, and shows photographs of cases, some of which I have reproduced. In this, Fig. 1 (A), the upper arch is constricted, the incisors are crowded and are in end to end occlusion with the lower (C). This gentleman advises the extraction of either the lower first bicuspid or central incisors, so that the upper incisors could close over the lower. Now, would not such procedure increase the crowded condition

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of the upper incisors, as they would be crowded lingually and downward, occupying a smaller segment of a circle? To use a homely example, if you had a bent place in the lid of a tin can, would you cut out a section of the can so the cover would go over, or would you repair the bent cover? Then why not expand the upper arch in the region of incisors and draw them down over the lower? If it were necessary from an artistic

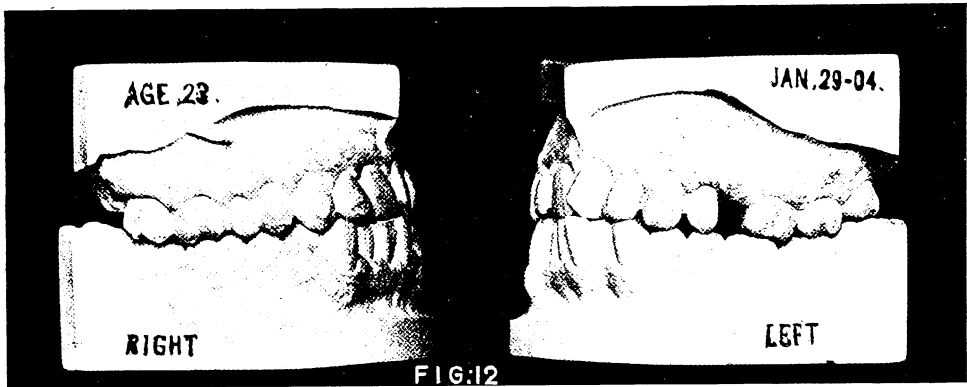


FIG. 12

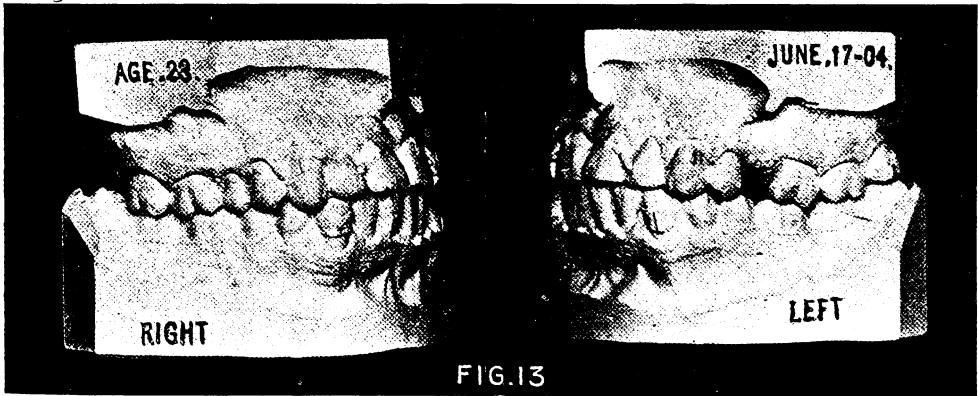
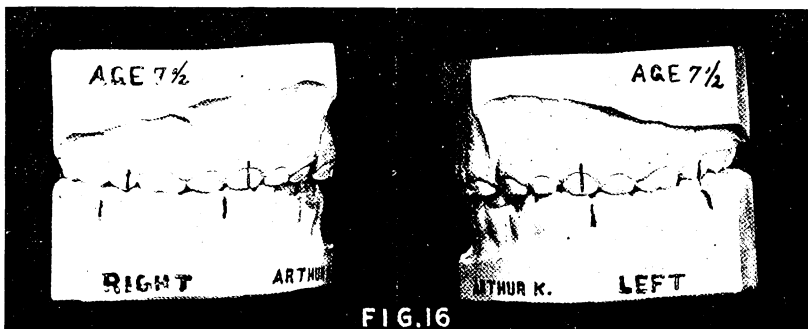
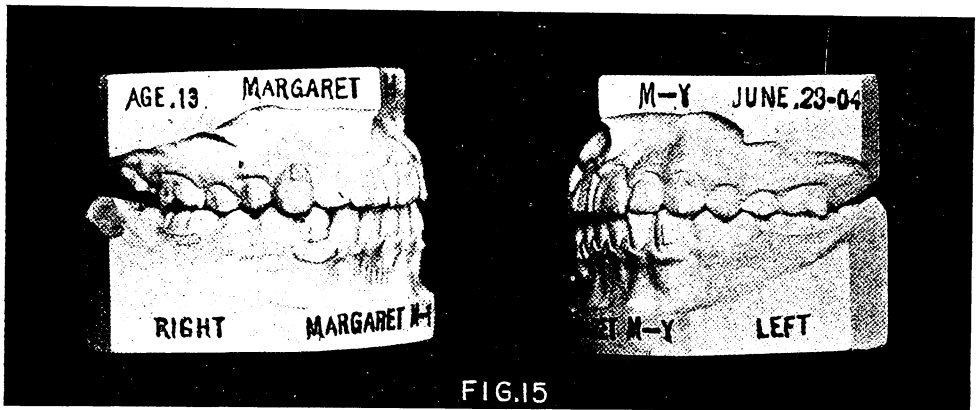
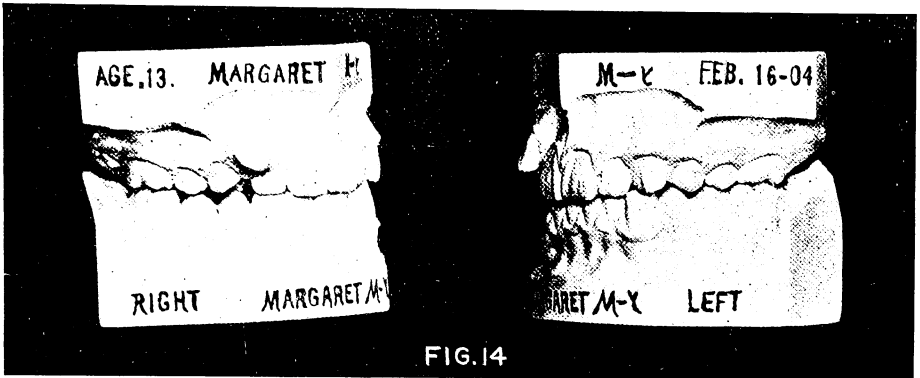


FIG. 13

standpoint to reduce this prominence, a bicuspid above as well as below should be sacrificed. It is quite probable, though, that the features needed this prominence, and that reducing it would weaken the face. Can we measure the loss of strength of character to a face like Savanarola (Fig. 2) if the first bicuspid had been extracted? In the upper jaw (B) I think that a pathological condition has been mistaken for a physiologi-

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cal, as the over-development of the alveolar process in the region of the first molars, and anteriorly, was probably caused by the pressure within the arch overbalancing that outside, and not too small teeth for the jaw, as suggested.

The next (Fig. 3) is a case in which the usual method of treating the first division of Class 2 (Angle), viz., the moving back of the upper teeth and forward of the lower, or even the old way of removing the first bicuspid above and carrying back the six anterior teeth, or Dr. Case's method of moving back both crown and root, would have been better, I believe, than the mutilation of removing all the anterior teeth and their alveolar process, which was the treatment followed in this case.

The cases in which it is necessary to extract are so rare that we may say that the mouth cannot be in harmony with the other features unless the full complement of teeth are present and in normal occlusion.



Study of Cases from Practice.

In Fig. 4 we have a profile of much strength and symmetry of outline. The teeth are in their proper positions in the arches and the arches in normal mesio-distal relations, the nose and throat are performing their functions, the bones and muscles have developed according to nature's plan, the result is harmony.

Fig. 5 shows an inherently strong face, marred by the loss of the right upper second bicuspid (Fig. 6), which has allowed the anterior teeth on that side to move back until the cuspid occupies the position of the

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first bicuspid and the incisors are in end to end occlusion with the lowers; causing the lower jaw to appear to the superficial observer to be protruding. Yet the lower arch is in normal mesio-distal position and well developed.

Fig. 7 shows a face in which the lips resemble those of Fig. 5. The upper is sunken, undeveloped, the lower is also lacking in fullness to a slight degree, the models (Fig. 8) demonstrate the reason. In erupting the upper incisors assumed positions lingually to the lower, while the crowns of the lower anterior teeth slant lingually. The arches are in

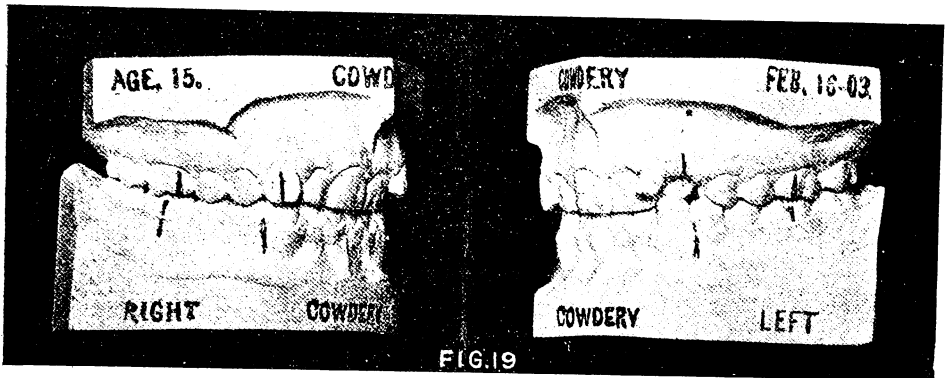


FIG.19

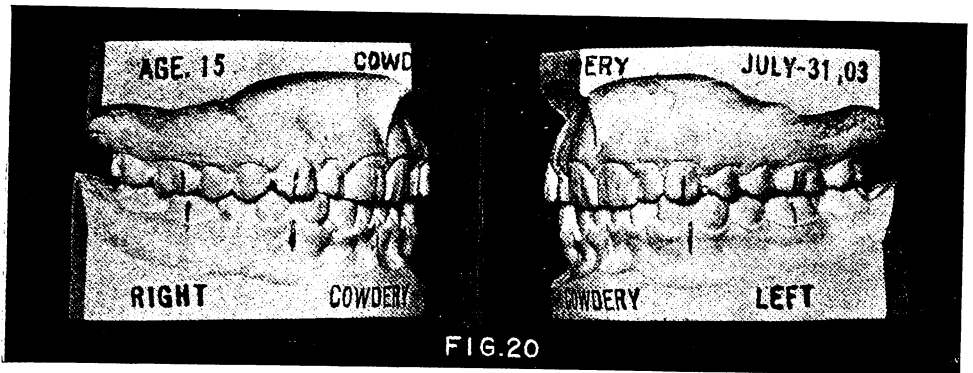


FIG.20

proper mesio-distal relations. Fig. 9 shows the models after the upper incisors had been moved out and we had waited a few months for the roots to move labially somewhat, and for deposit of the alveolar process around them, before finishing the case by expanding both arches and making room for the upper cuspids. How unfortunate that this case was not treated as soon as the upper incisors began to assume the malposition in

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erupting so that the alveolar process and upper lip could have developed along normal lines.

Figs. 10 and 11 is a case of irregularity associated with pyorrhea in a lady 37 years of age. I treated the pyorrhea about four years ago and it has not recurred, then later treated the irregularity.

Figs. 12 and 13 show one effect of extracting to "make room." This young man had a space where the left upper second bicuspid was sacrificed, but anterior teeth were held forward by the interlocking of the deep

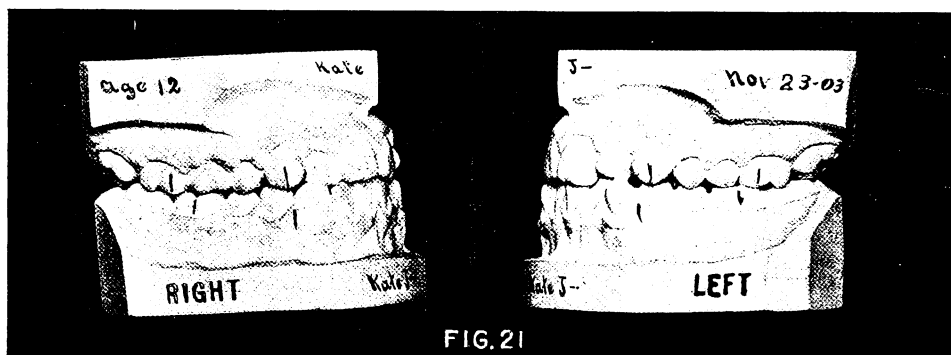


FIG. 21

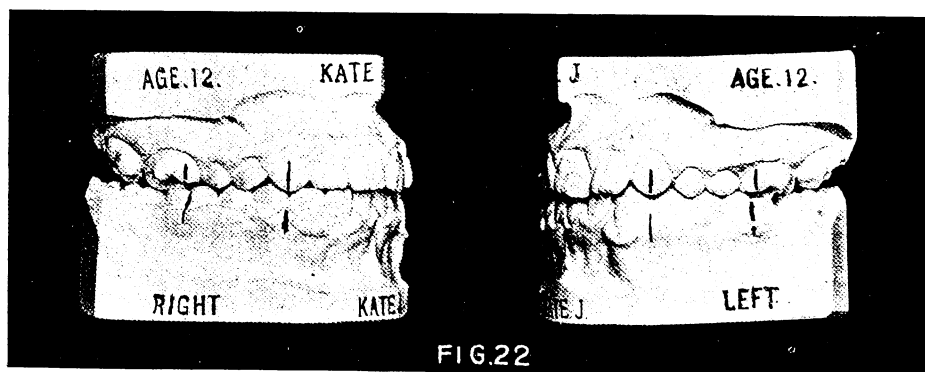


FIG. 22

cusps. The treated case (Fig. 13) shows that we did not need this space; in fact, were handicapped by it.

Fig 14, right upper cuspid in labial occlusion, space between first bicuspid and lateral incisor closed. Fig. 15 shows the result of treatment without extraction, viz., the placing of all the teeth in their normal positions in relation to occlusion as well as proximal positions in the arches.

Fig. 16 gives the developing mal-occlusion of a child; on the right side the lower arch is in distal occlusion the width of one molar cusp.

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How important to correct this at once, so that the face may develop along normal lines, and so that the upper anterior teeth may in erupting have the support of the lower arch out in its normal position, and thus not be forced by the lips, lingually and to overlap each other, until they reach the receding lowers.

Fig. 17 shows the effect upon the profile of this form of mal-occlusion when it has been neglected until after eruption of all anterior permanent teeth, while Fig. 18 shows the profile after treatment. In Figs. 19 and 20 the models of this case tell the story of restoration of normal occlusion.

Fig. 21 is of a case in which the lower arch is in mesial occlusion, while the anterior teeth of both arches are crowded and several in torso-occlusion. This case was treated by expanding arches and at the same time using intermaxillary force to move lower teeth distally. At the time the models in Fig. 22 were made, the remaining treatment was to move the lower second molars buccally and allow the first upper molars to move lingually slightly.

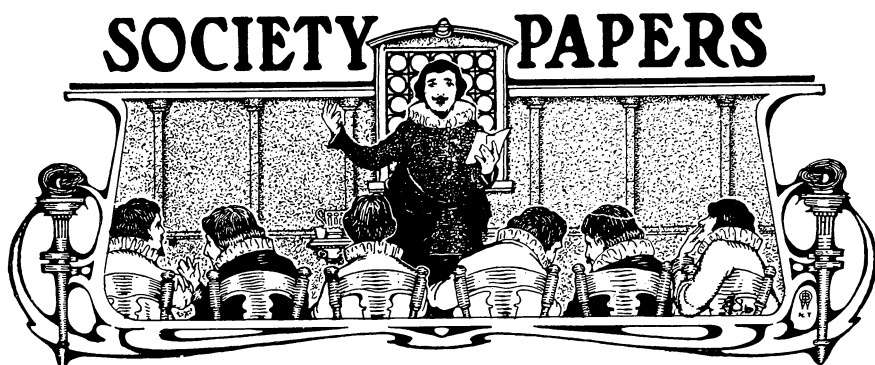
In conclusion I wish to emphasize these three points:

First—The importance of early treatment, if possible, as soon as the first molars or incisors begin to assume their malpositions, just guiding them into normal relations, thus avoiding a longer and more costly operation later.

Second—Do not mutilate, tear down and destroy the balance of the arches and features by extracting.

Third—The broad knowledge required to treat cases of malocclusion successfully. The study of occlusion, the anatomy of the face, of art, the relation of nose and throat to malocclusion, the periodontal membrane, alveolar process. Our knowledge of the last three subjects is very limited, and we need much original research along these lines.





Oral Antisepsis, Its Prophylactic Influence Upon Local and General Diseases.

By H. C. REGISTER, M.D., D.D.S., Philadelphia, Pa.
(Read before the New Jersey State Dental Society, July, 1904.)

Oral antisepsis means the destruction or arrest of growth of morbid germs in the mouth. Prophylaxis is significant in anticipating the pathological influences of micro-organisms that accumulate or propagate in the mouth. It also embodies the etiological study of mouth infections, arising from its environment, and spending themselves locally and constitutionally.

First Discovery of Bacteria.

The discovery of micro-organisms was made in the year 1675 by Arthur von Leuwenbock, a linen draper by trade in Amsterdam, Holland. He was the first investigator who recognized the value of "Aids to the Eyes" in scientific work, and is known as the "Father of Microscopy." He presented a paper to the Royal Society of London in 1683, setting forth the discoveries of his so-called "Animalculus," found among other media, in calculus taken from teeth in the human mouth. This paper, still in possession of the Society, embodies his observations and illustrations.

Drs. Miller, Abbott and others have recognized several groups of bacteria found in the mouth today belonging to the same ancestry as those found by Leuwenbock, three and a quarter centuries ago.

Dr. Abbott, Bacteriologist of the University of Pennsylvania, says that from a perusal of his old text and an inspection of its plates, there remains little room for doubt that Leuwenbock saw with his primitive lens the bodies now recognized as bacteria.

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The study of bacteriology may be said to have had its beginning from these observations of Leuwenbock. The pathological relations, however, of these unicellular vegetable micro-organisms did not associate itself with medicine until later years—medical and scientific men generally being all at sea as to their origin and effect. The two general acceptations covering many years, were, first, that micro-organisms germinated spontaneously, or that they were abiogenetic, and, second, that they were sequellæ of disease. The third, and of course the present day acceptation, is that they are the cause. Little attention (medically speaking) was given to the subject as a cause of disease, until Pasteur, the French chemist, made the important discovery that the putrefaction of beer and the souring of wine were related to micro-organisms as the cause. Later he, associated with his students, Pallender and Devinel, saved millions of dollars to France by destroying the bacilli, pebrini, the enemy of the silk worm, and anthrax bacilli, so deadly to sheep.

It is hardly necessary to call attention to the fact that until of very recent years the mortality after surgical operations was very high—sixty per cent of deaths resulting from pyæmia, septicæmia or hospital gangrene, conditions which were due to infection by micro-organisms. This is now anticipated through the antiseptic system introduced by Lister.

Pasteur's discoveries led to this; also to a scientific classification of bacteria that is still being carried on by numerous investigators. These investigations within the last fifteen years have brought to light developments in the study of bacteria, that by associating them with the cause of disease, may, through ultimate acquaintance with their activities, lift hygiene to the dignity of an exact science.

Oral antisepsis means just this: If a mouth from youth to maturity be kept hygienically clean, there can be no bacterial action producing caries upon the crowns of the teeth; if the salivary calcic deposits, which is effete matter and being filled with constant fresh supplies of fermentable food, débris of which micro-organisms take full possession, are not allowed to accumulate, there can be no calcic traumatism or toxic destruction at the gingivæ.

This statement is not wholly comprehensive, as there are other factors in the case. Any mechanical treatment or fixture applied to the gingival spaces or necks of teeth that becomes an impingement, and so affects the circulation, is recognized on the part of nature as an intruder. Unfinished fillings at the cervex, bands or ferrules on crowns and bridge abutments, are most serious offenders when they impinge upon the cementum or are imperfectly terminated. Large quantities of oxy-phosphate of zinc used to set crowns and bridges, and exposed at the

gingivæ to bacterial action, become very infectious, for zinc phosphate is a harbinger of bacteria. Any mechanical irritation too long applied becomes a focalizer for trouble, separating teeth too rapidly; orthodontia under the same influence is a source of susceptibility.

The diagnostic inferences here cited are too rarely associated with "the after result" of tooth pathology. Oral antisepsis embraces such a prognosis being made as will anticipate these results. It may be taken as an axiom that in a perfectly healthy mouth, when no bacterial plaque becomes focalized upon the enamel, there can be no caries. Again, where there is no calcic deposit including its bacterial contents in the gingival spaces, and where the gum and pericemental membrane remain unbroken, there will be no exciting cause for gingivitis, naturally no interstitial gingivitis and no pyorrhea alveolaris. It is rare to find a mouth where some of the teeth are not more or less affected by a simple gingivitis at as early an age as fifteen years. This commences as a slight alteration of the mucus membrane in the festoon or fold of the gingival spaces, this alteration being the minor tone of infection from infinitesimal granular calcic deposits, inspissated mucus and saliva, and minute particules or solution of food débris all bacteria laden. This condition if unrecognized in its initial stage becomes the major tone in a true gingivitis, and may develop into interstitial gingivitis, phagedenic cementitis, a dissolving process of the cementum analogous to caries of bone; or it may terminate in a pyorrhea alveolaris in which the leucocytes, taking a hand in making an effort to stay the progress of the bacterial progression, break down in the formation of pus.

Just as the focalization of a bacterial acid producing group housed under its plaque at some part of the crown is the initial cause of caries or tooth decay of that part of the tooth, so have we a traumatic toxic infection in a break at the gingivæ, a possible forerunner to cemental or pericemental pathology.

While believing the environment of the mouth is the active cause of tooth destruction, yet every individual is a unit unto himself. Heredity, auto-intoxication or metabolic change are to be considered as contributory influences, which must be taken into consideration. In other words, the teeth and attachments, being a part of the individual economy, are affected not only from external environment directly, but from internal vital balanced or unbalanced systemic conditions.

The teeth are a physical part of the individual fixed in a network of anastomosing capillaries of the highest vascularity, the attachment of the gingivæ uniting the hard and soft tissues being anatomically unique. The breaking up of this attachment, however, is the first step to possible root infection, primarily by direct traumatism, which secondarily results

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in toxic infection through the opening up of the lymphatics to septic inoculation.

An unbroken enamel means immunity to caries; an unbroken gingival festoon means immunity to infections of the cemental or pericemental membrane. Continuity of surface structure is the one and only guard against oral infection. The time is ripe for the dentist to assume responsibility in his chosen field, not only in anticipation of oral diseases, but in recognition of the fact that many infections arise from the mouth having but one factor for their origin, namely, septic organisms.

Pathogenic germs are in the mouth constantly, proliferate there; indeed, those of pneumonia and diphtheria are said to be ubiquitous in the oral cavity. In recognizing these conditions, there opens up to us a field of usefulness that outstrips all the advances made in dentistry in its technical possibilities. It not only, in the fullness of its influences, displaces repair by anticipating the conditions which make repair necessary, thus retaining nature's handiwork, but also guards against possible infection through the proliferations of pathogenic germs ready to be taken into the system in doses large enough to overcome function, or to be absorbed by the lymphatics into the circulation through a broken mucous or cutaneous surface. The mouth presents all the factors always ripe for a culture of numerous groups of pathogenic bacteria. Such conditions in the mouth do not limit themselves to local sepsis, but include the whole series of infections caused by pyogenic germs. It is but a question of dose and resistance.

General Disease Related to Oral Infections.

In a number of cases of gastric catarrh associated with pyorrhea alveolaris in its tertiary or pus forming stage, I have found that through local surgical and medicinal treatment combined with mechanical fixation by splints when necessary; or, by the extraction of such teeth as were beyond conservation, the patient was restored to health without internal medical treatment. The sole curative agency was the healing of the mouth tissues.

This association of some form of cachexia with pyorrhea led me to a close clinical observation of patients suffering in any way with mouth infections, in order that a diagnosis might be properly made, and when outside my province the patient was referred to the proper physician, surgeon or specialist for treatment.

Let me cite Dr. Hunter, a prominent surgeon of London, who says: "I have seen a large number of cases, illustrating both the frequency and importance of the subject; illustrating, moreover, what I regard as even more striking—the extraordinary degree to which oral sepsis is overlooked, alike by all parties concerned—the physician, the surgeon.

the patient. I have already had occasion to draw attention to the subject, but additional experience only serves more and more to emphasize its importance from medical, surgical and preventive medicine points of view. I desire here to point out once more how common a cause of disease it is, how grave are its effects, how constantly it is overlooked, and what remarkably beneficial results can be got from its removal."

Let me also quote Dr. Robert T. Morris in a paper read before the Fifth District last December, in which he says: "One class of infections, very dangerous ones, have been frequently overlooked by dentists—these are infections following the removal of abscessed teeth. Patients die, and the causes are not reported; they come into the hospital to be treated for pneumonia. There are patients dying this minute in this city from the result of having abscessed teeth extracted while in the course of acute infection; there are cases dying continually in this city not recorded and not discussed for the reason that they are entered at our hospitals as cases of pneumonia; but they are cases of septic pneumonia, embolic pneumonia, resulting from infection from abscessed teeth. Very often the dentist knows nothing about it. He removes the teeth; he hears four or five days later that the patient has developed pneumonia, and believes it to have been a coincidence; thinks his part in the case is not of consequence, and the patient dies. The case is recorded as death from pneumonia, not as septic pneumonia from an abscessed tooth."

Alveolar abscess is a local disease, controllable through oral antiseptics and preventable through prophylaxis. Its origin is the death of the pulp and germ toxin involving the cementum pericementum and alveolus; all the vascular network are involved under local excitants, culminating in the whole system being under the ban of its focalization. Do not the breaks in the mucous surfaces so generally found at the gingivæ open up the same influence to systemic infection?

Last winter the records of Philadelphia gave the death ratio from pneumonia an average of eighteen per cent of all the deaths running through the winter months. A weekly notation showed the great number of the victims came from the unhygienic classes, a comparatively small number being outside the wards of the mill districts. Could not mouth infection have had much to do with the large percentage of fatalities among this class?

The prevalence of pneumonia can be ascribed to an unhygienic environment that localizes itself individually, and culminates, as all infectious diseases do, when the toxic dose is great and the physical resistance small. In drawing attention to mouth infection, it is with the inten-

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tion of pointing out how many diseases arising therefrom could be anticipated by a system of oral antisepsis.

Compulsory Prophylaxis In a Factory.

I cannot pass this subject without calling attention to forced prophylaxis, as inaugurated by the Diamond Match Company. It is known that the employees of this company were particularly liable to a disease known as phosphor-necrosis. The company employs over two thousand hands. By a strict supervision of fixed prophylaxis this dread disease has been stamped out. Not only this, but stomatological diseases have been noticeably reduced. Thus from the dental standpoint, it would be of interest to know what comparative influence fixed prophylaxis has had in reducing systemic zymotic diseases among those two thousand people.

Caries.

Talbot thinks that no man in his advance in evolution finds less use for his teeth, the law of economy in growth is applied in a degeneracy in the structure which includes jaws, teeth, gums, alveolar process and pericemental membrane; while the cementum is not mentioned, of course it is understood.

This plausible physical change, added to functional inactivity and an increased and enriched environment through excessive use of carbohydrates, is making for micro-organisms a more perfect atmosphere in which to proliferate and spend their activities. It is essential for mouth bacteria to have their host, cadaveric matter.

Antisepsis means the reduction of this matter to a minimum, thereby retarding or eliminating the progress of bacterial propagation by starvation. Just the minutiae in the process of tooth decay is far from being cleared up; to know that it is external, from bacterial action, is but a step in the right direction. Our knowledge of this tangible fact we owe to Dr. Miller.

The next tangible explanation of the process of dental decay is by Williams, who thinks it is essential in formative caries for a bacterial plaque to be focalized before it can become operative. Herein antisepsis plays its part in anticipating focalization. These conditions, as demonstrated by Drs. Miller and Williams, are about all we know of tooth caries or decay. The theory that susceptibility or immunity to caries is controlled by a hard or soft tooth has been disproved by Black's investigations, which showed the percentage of lime salts in teeth to be always and in all classes so nearly alike as to be practically identical. Color and shading in teeth are pigmental effects conforming to the individual temperamental type. Environment as the exciting and active cause has all to do with tooth destruction.

Undoubtedly the mouths of mankind have been the culture field of micro-organisms from far back in prehistoric times. Their evolution began as soon as an atmosphere was made possible for their existence.

Bacteria in all probability antedated man, the saphrogenic group being an essential factor in making the world inhabitable. Could it not be that pathogenic bacteria are Darwinized through a medium associated with the higher civilizing methods of life? While a clean tooth surface means immunity to caries, this is not true of erosion. The etiology of erosion is still a puzzle to the scientists. Through investigations in semeiology now being made by Michels, Kirk, Kyle and others, it is hoped there will be brought to light a solution of the mystery. Saliva, however, is accepted as a factor in tooth erosion; just in what way is unknown.

Erosion.

Dr. J. Morgan Howe in 1892 brought to the notice of the profession erosions affecting pulpless teeth side by side with those having living pulps. This proves its being of an environmental causation. Dr. James Truman, back in the eighties, took the position that erosion was the solvent action upon tooth structure of an altered mucous from certain of the buccal mucous glands. Later Dr. Kirk made a series of chemical experiments upon the saliva, and believes general erosion to be due to lactic acid.

He, however, divides erosion into two classes; those in which erosion is general, the teeth being uniformly involved, in which lactic acid is the solvent; and another class due to the exudate from abnormal buccal mucous glands, the activity of which is due to the acid sodium phosphate or acid calcium phosphate. He eliminates the uric acid theory and believes the localized erosion due to systemic disorders classified as disease of sub-oxidation or faulty metabolism.

Value of Atomizer In Treatment.

While I have no intention of discussing the etiology of tooth erosion, from clinical observance I am led to believe this disease has its origin in mouth environment. This through infection of the mucous follicles or glands. I have noticed complete suspension of erosion, in cases associated with interstitial gingivitis, where the treatment for the same was observed with care and regularity, using the medicament in an atomizer, the patient using a bulb atomizer, and I using it under high pressure. From clinical experience, I infer that erosions have their origin in some altered excretion in the mucous glands. Through the stimulating or massage effect produced by the air pressure upon the mucous surfaces associated with the medicinal atomizer or spray contact, the excretatory deteriorating product is removed before expend-

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ing itself on the teeth, or the treatment brings about a normal gland excretion.

The Cementum and Pericementum.

While my experience of atomization under heavy air pressure for the control or eradication of erosion is incomplete, I believe it holds the key to its solution through oral antisepsis. Tomes says: "The dentine is organically connected with the pulp by the dentinal fibers; these are connected with the soft cement corpuscles, which again are brought by their processes into intimate relation with similar bodies in the highly vascular periosteum, so that between the pulp on the inside and the periosteum on the outside, there is a continuous change of living plasm." The pericementum or tooth periosteum is a single membrane common to cementum and alveolar wall. Thus we find the cementum an encapsuled strata of vital tissue. Cementum is essentially bone, and open to the same diseases. It is attached as a specialized product in essential relation with the dentine, made so that the dentine might receive a periosteal covering, the tooth a cushion for functional tactile impressions, and the organ a gomphosis joint.

The cementum I concede to be the vulnerable point in tooth root pathology. The local infection of the cementum means its partial or entire destruction, carrying with it the pericementum, for destruction of the cementum means also the loss of the pericementum and exfoliation of the offending tooth.

There can be no tooth periosteum without its cement bone. With the loss of the tooth the immediate parts return to health. This would indicate that the cause is confined to the tooth and its investments. Therefore, a simple gingivitis as the initial forerunner of a possible pyorrhea alveolaris is in its etiological study confined strictly to the anatomy involved. Its influence or sequellae, however, may be far reaching.

The matrix of the cementum is made up of vascular canals corresponding with the Haversian canal of bone. They run on the long axis of the root.

The lacunæ are irregular cavities also corresponding with the long axis of the tooth. Sharpey's fibers are composed of connective fibers on the short axis of the root, and from the medium of connection between the alveolar dental membrane, pericementum and the cementum. The dentine and cementum are fused in a granular layer of dentine. This is after Marshall.

The cervico cemental terminus is extremely thin and very vascular. Persistent irritation applied at the point of gingival union breaks in upon the continuity of the physical relations, affecting nutritive function and repair, and sets up a degenerative metamorphosis in which nature is

forced to make a new demarcation. So simple a matter as a ligature of silk loosely tied at the neck of the tooth will set up an acute state of irritation, running into inflammation, in a few hours. If allowed to remain a few days it will break up the gingival union. If soon removed the parts immediately return to health and comfort. So with all other impingements of a traumatic and toxic nature. If, however, the cervico terminus of the cemental tissue be exposed to traumatism associated with toxic germs for long standing periods, nature fails to demarcate the destructive influences. The result is an interstitial gingivitis assuming either the form of phagedenic pericementitis, a sloughing process of the cementum carrying with it the pericementum, resembling very much caries of bone, arising from infection of the vascular canals and lacunæ in the cementum, or a pyorrhea alveolaris in which we may or may not have, in addition to all other deposits, serumal calcic matter; the secondary phase of the disease makes this condition possible.

**Periosteal
Abscess.**

Periosteal abscesses in vital teeth, as found on the side of roots, have for their exciting cause micro-organisms in the vascular canals and lacunal spaces in cemental tissue taken in at brakes in the gingivæ and the openings closed by calcic deposits.

The influences of septic dissolution of bone or cemental tissue at times run in grooves to some depth, and the contents become imprisoned by calcic deposits which close the drain. There being no vent, steam is immediately raised, so to speak, and the white corpuscles go to the rescue.

Irritation, inflammation and tumefaction follow in rapid succession, causing a broken down tissue and terminating in a periosteal abscess.

The natural openings to cemental abscesses I have always been able to trace to the gingivæ by using a small exploring instrument, carrying with it a strong solution of sulphuric acid. With care the calcic matter can be dissolved out, opening up the natural and original entrance and venting the abscess from this source. If thus opened and the calcic, bacterial and necrotic matter be removed, the gum remains intact, but if curetted at the point of tumefaction the opening becomes a permanent drain, exposing the entire area of disease. It is therefore wise in these small periosteal abscesses to open from the gingivæ and treat from that entrance, thereby preserving the gum relation.

**Pyorrhea
Not of Systemic
Origin.**

Clinical observances do not associate in my mind any of the several phases in root pathology as originating from an auto-intoxication, metabolism or uric acid diathesis, otherwise than being associated with a lowered vitality. While an intimate vital recognition and association to this extent is highly probable, I cannot con-

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ceive pyorrhea having for its initial causation a systemic dyscrasia. On the contrary, the local continuation of the disease through infection has a tendency to augment any physical metabolism that may exist, or create one of its own. If antiseptics be practiced in its highest sense, there must first be a realization of the presence of septic matter.

In oral hygiene we are dealing with constant renewals of degenerate matter, in which pathogenic micro-organisms assert themselves and extend their influences locally and systemically. Bacteria grow rapidly, calcic matter finds its source as an excrement in the saliva, food is taken almost constantly and mostly in a concentrated form, especially adapted to the life and activities of bacteria.

Consumption of Sugar.

The consumption of albuminous matter and carbohydrates, the latter in form of sugars, has grown to astounding proportions. All the sugar required by man came originally from starchy food. Today he takes his sugar straight and lots of it. The world is consuming ten million tons of sugar annually, the United States being the largest consumer, using on an average seventy pounds per capita. In 1893, twenty-four hundred thousand tons were used. England comes next, France next and Germany next. Inquiry will show that a relation in direct ratio exists between the quantity of sugar consumed and the prevalency of national tooth decay. This is but one pointer. It is hardly questionable that the use of sugar or a carbohydrate is, through its bacterial association, largely accountable for dental caries. Is its excessive use not also laying the foundation in an auto-intoxication that is planting the seed of disease in a greater mortality among the sugar eating nations, than is made by alcohol? Antisepsis means the destruction or arrest of morbid germs, therefore it must provide the means for such a consummation.

Prevention of Caries.

Miller says there are four ways by which we can counteract or limit the ravages of dental decay. 1st. By hygienic measures to secure the best possible development of teeth. 2d. By repeated though systematic cleansing of the oral cavity and the teeth, to so far reduce the amount of fermentable substances as to materially diminish the production of acid as well as to rob the bacteria of the organic matter necessary to their rapid development. 3d. By prohibiting or limiting the consumption of such food or luxuries which rapidly undergo acid fermentation to remove the chief source of the ferment products injurious to the teeth. 4th, By the proper and intelligent use of antisepsis to destroy the bacteria, or at least to limit their number and activity.

Dr. Miller pointed out the great value of prophylaxis by experimentation through the influence of mechanical cleansing on the process

of fermentation in the human mouth. Taking saliva from the mouth before cleansing and mixing it with starch, he placed the mixture in an incubator. Afterwards cleansing the mouth in the usual way with brush and silk and assimilating the saliva with starch, he also placed that in the incubator. The first mixture not only showed signs of fermentation sooner than the second, but also formed much more acid in a given time.

Natural deductions of Dr. Miller's experiment, which is an exceptional one, show that in the unclean mouth the forces of bacteria predominated. As pointed out by Dr. Miller, if the environment of the mouth be controlled, it being the inimical cause of tooth pathology, the teeth are immune. To formulate such a practice of oral hygiene as will destroy or check its destructive influence it is essential that the patient should co-operate. In this way the dentist can hold in abeyance a dangerous environment, that returns about as fast as it is removed. If, however, each fresh supply is removed before becoming operative through its infective influences, a good result is gained. To do this the means must be made easy and always ready.

Treatment.

An experience with the several uses of compressed air for the last twenty-five years in my private practice has given me such pronounced good results in associating it with oral prophylaxis, that I am recommending the laity to take advantage of its great possibilities, in their homes, as a means of cleansing the mouth, and holding it in hygienic condition. It is quite unnecessary in addressing an experienced audience like this to enter into any detail of the general plan of oral antisepsis, but that a better understanding may be had of the system in which I am interested, a short consideration of the two classes of patients that are included in prophylactic work may prove of interest.

One embraces the care of the mouth from childhood up through life, which will, under proper conditions, I believe, anticipate any serious break in the anatomical relation of crown, root or adjacent tissues.

The other accepts the condition as found and through surgery and therapeutics bring the disease under control and effect a return to a partial or full restoration to health.

The instruments used in operating should be small, some extremely delicate, and the fingers should be depended upon for an exquisite tactile recognition of different kinds of tissue. The use of the electric lamp is essential. Until it was introduced I found it impossible to recognize an incipient gingivitis in obscure parts of the mouth. With its use there is a revelation.

The engine, including straight and acute angle hand pieces, is a necessary instrument. It is also a time saver. Associated with the engine

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are the bristle brush wheels, felt and rubber disks, cotton rolls and wood polishers. Then we must have the hand port polisher, and waxed floss silk impregnated with mercury bichloride one to one thousand strength.

Germicides are to be used in the atomizer under high pressure, associated with the stimulating influence of compressed air. The therapeutical agents usually employed consist of tincture of iodine, tincture aconite, sulphuric acid, silver nitrate, salol, dioxygen, alcohol, vaseline oil, some of the essential oils, such as peppermint and cinnamon, and pumice. To sterilize the mouth before commencing any operation, I concede to be a good practice, and there is no method that meets that condition so agreeably and quickly as germicidal atomization. In the treatment of the first class of patients, those who follow up the advantages of oral antisepsis with regularity, say every one of two months, and when an atomizer is used at home in connection with brush and silk, and there is absence of all root pathology, about half an hour is required to do the therapeutical and operative work of cleansing and sterilizing.

This is accomplished by first atomizing the mouth with a germicide under heavy air pressure. The crowns of the teeth, including the gingival spaces, are then painted with iodine tincture a half to full strength, depending upon the age and condition of the patient; the staining qualities of iodine bring to view the accumulations, possible stagnant inspissated septic matter, all colorless until stained. The iodine gets under this environment and makes it easy of removal. Dr. Miller grades iodine germicidal action at one in six thousand. The use of iodine as an aid in cleansing teeth was introduced by Dr. Francis, of New York City. While the teeth are under the stain, which is allowed to remain a few minutes, a mixture of powdered pumice and dioxygen made into a paste is used in connection with Robinson's bristle brushes in the engine, using both the straight and acute hand pieces for gaining such access as is necessary to reach all the exposed surfaces of the teeth, and giving such friction as will produce heat, thereby increasing an esdosmotic circulation, throughout the basis substance, and adding to the life lustre of the organ. This massage of the teeth, as it may be termed, I believe to be of great benefit.

The interproximal spaces throughout the mouth are then thoroughly atomized, followed by another application of iodine, and when associated with gingivitis it may be united with aconite. The electric mouth lamp is brought into use and the teeth are then carefully gone over with delicate scalers, some of the needle points that enter the gingival groove without cutting it, and free it of any granular calcic matter that may be attached to the necks of the teeth. The early recognition of granular calcic deposits is a valuable prognosis. Care must

be observed not to break through the gingival groove into the cementum. Scaling is followed where necessary by a wood polishing point, either in the hand or engine, the necks in the interproximal spaces being carefully examined and cleaned by twirling a pulp brooch, followed by the germicidal silk, in one, two or more strands as the space calls for, giving such friction to the surfaces as may be required. Where necessary first fill the space with the dioxygen pumice paste. As the process progresses the mouth is constantly atomized, lifting out all débris, including the pumice which has been used in cleansing. This atomized under heavy pressure gives to the mucus membrane and its glands a massage which is most beneficial.

Under the second heading, when it is found that the gingival space is broken and a pocket has formed and permitted an infection to a greater or less extent, the surgical removal of all accumulations is the first essential in the treatment. Associated with the use of instruments is sulphuric acid twenty-five per cent to a full commercial strength. The acid permits a more easy removal of the calcic deposits, destroys bacteria and assists in the removal of necrosed bone.

In cases of interstitial gingivitis or pyorrhea alveolaris, no half measures must be depended upon. The tooth root must in all cases be made absolutely free of deposits, the necrosed bone must be gotten rid of whether it be cementum or alveolus, and the resident micro-organisms, be annihilated. Destroyed cementum is never reproduced. Its destruction carries with it the pericementum. Endeavor to check the disease and hold what remains. When teeth are loose, splint before operating. To maintain this aseptic condition, atomize under heavy pressure. In germicides, thus used, associated with examination at stated periods, we have a means in prophylaxis that approaches being specific. When used with intelligence the health tone of the teeth and whole mucous surface proclaim immunity to mouth infection. These observations and deductions are presented to this honorable body as being worthy of your consideration and investigation.



Notes on Mouth Breathing.

By DR. T. E. CARMODY, Denver, Colo.

(Read before the Colorado State Dental Society, October, 1904.)

Having observed many pathological conditions, due to abnormal breathing, I have naturally been drawn to make closer observations each day, and it is surprising to note the changes which can be traced to this common cause.

Nasal Breathing.

Naturally, all the air passing to the lungs should go through the nose; being thus filtered, moistened and warmed—enumerated according to their importance.

As the air passes through the anterior nares, the large dust particles are stopped in a sieve formed by the *vibissæ*. Then passing upward along the dorsum of the nose, over the anterior ends of the inferior middle and superior turbinate bodies, all of which contain erectile tissue, composed largely of blood vessels. These structures supply moisture and heat, and, as the cells in the upper or so-called olfactory regions are ciliated, most of the remaining dust is caught and started on a return journey to the exterior.

As the air passes over the superior and middle turbinate bodies, the pressure produced by inspiration causes an emptying of the ethmoidal sinus, and through them the longitudinal sinus and cavernous sinus keep up the normal circulation, at the lower part of the anterior lobes of the brain.

This latter explains largely why abnormal breathers are dull and sometimes even stupid. Passing downward, over the posterior ends of the middle inferior and part over the superior turbinate, the air enters the pharynx, where, having been deprived of practically all its irritating properties, it is not noticed. This would be entirely normal, and the air would not carry dust into the lungs, causing conditions of pneumonia; but with our civilization comes artificial condition, and, especially in city life we have air laden with dust, which irritates the nasal passages, causing an excess of secretion which cannot all be taken up by the inspired air as it should be. This seems a broad statement, but Grunwald states that normally there should be no secretion from the nose.

Mouth Breathing.

In nasal breathing, we have in the pressure of the inspired air a stimulus to development of the nasal passages, as the pressure is equal on all sides of the bones. On the contrary, when the air passes in through the mouth, it cannot be filtered, for there is no provision for

that function, and as only a small portion of it comes in contact with the moist tissues, it cannot take up the requisite amount of moisture, and that which is taken up must be drawn from structures not provided by nature with more than the amount necessary for their own use. This will be observed in the following: The notched and checked anterior teeth, the dry tongue, tonsils and pharynx. In the latter the changes are more pronounced than in the others, since the large dust particles striking against the back walls and sides of the pharynx, cause little wounds which, as they increase in number, produce changes incompatible with the normal function of the tissues.

As for warming, Kayser has proven that air, passing through the mouth is raised to within half a degree of that passing through the nose, and also after tracheotomy the trachea and bronchi are capable of warming the air from 25° to 30° C., which is the temperature required by the lungs in order that it may not be injurious. The olfactory and nasal reflexes protect us to a great extent from irritating and injurious gases, which are unbearable if inhaled through the nose.

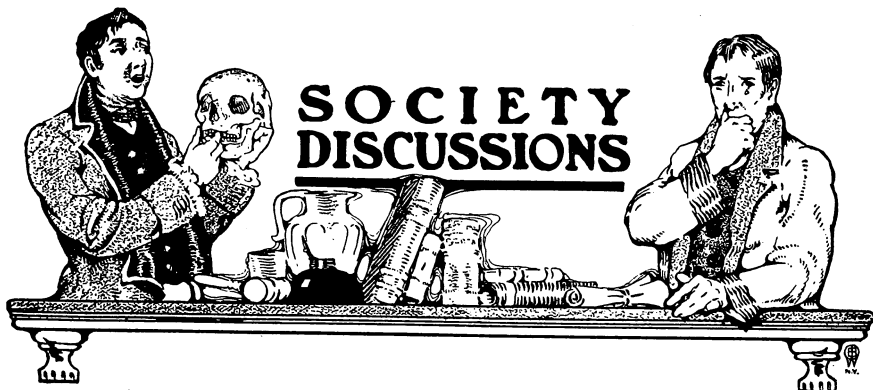
Causes of Mouth Breathing.

Among the causes of mouth breathing faulty formation and weakness of the ala cartilages and muscles of the ala, hypertrophies, abnormally placed structures and new growths are the most important. The effects are the high arch and resultant malocclusion, the deflected septum, due to the latter, the narrowing of the face and general hypothasia of the oral and nasal cavities.

The immediate causes can be explained as follows: By the mouth remaining open the pressure therein is normal, while there being no air in the nasal cavity, or practically none, the pressure is reduced, therefore the arch is pushed up, causing the deflected septum, on account of not allowing its development in a straight line. Also the pressure of the muscles of the cheeks on the bones when the mouth is open has the same effect, for the lips and cheeks are at rest when the mouth is closed.

Regarding the treatment, the first step is to remove the cause, which in these cases is generally enlarged tonsils, adenoids or both. This being done, the next step is to spread the arch, placing the teeth in normal occlusion. In young patients this also has the effect of straightening the septum and avoids the necessity of septal operations.

This shows very clearly how the rhinologist and orthodontist can work together for the good of the patient, and the changes produced as a result of these corrections prove that these children are not degenerates, as they are sometimes called.



New Jersey State Dental Society.

36th Annual Meeting.

Discussion of Dr. Register's Paper.

The President called upon Dr. L. Ashley Faught to discuss the paper.

I have been deeply interested in this subject, and **Dr. L. Ashley Faught, Philadelphia, Pa.** began my work some time about 1887; since that date I have been, in a very humble way, practising according to the methods used by the leaders of the profession. I believe most heartily in, and most thoroughly indorse, the proposition which Dr. Register presents here, that by using thorough prophylaxis in the mouth, by preserving the oral hygiene, we can anticipate and largely prevent many physical diseases which arise from the various toxins being taken into the system.

There is so much in the paper with which we must most thoroughly agree, that it perhaps would be unwise to attempt to select a single point to which we might possibly take exception. Yet there is one thing in the paper, if I understand the essayist correctly, which does not conform to my conception, at least, of what I feel to be the origin of pericemental abscesses, and which I observe has run through all the papers and discussions which have been presented on pyorrhea alveolaris eliminating practically the systemic relation, which it seems to me has an important bearing on the etiology of those two diseases.

I may be mistaken in this; I may have misunderstood the reading of Dr. Register's paper, and I may also have misunderstood the discussion upon pyorrhea alveolaris which took place here last night and this morn-

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ing; but I am growing more and more confirmed in the conviction that systemic or auto infection or intoxication plays a very important part in the etiology and development of these two diseases. In other words, to my mind, pyorrhea alveolaris and pericemental abscesses are simply expressions of a disease having a systemic origin. This may be simply a dogmatic statement on my part, and yet it is a conviction, especially in relation to pyorrhea alveolaris. I have seen such results following systemic treatment alone, practically, in pyorrheal cases, that I cannot doubt that auto infection has much to do with that difficulty, and I believe from experience that when we confine ourselves exclusively to oral treatment, practically local treatment, we are wrong, and our failure is due to the fact that we are treating manifestations rather than the disease itself. Faulty assimilation, imperfect digestion, imperfect elimination, all contribute to the causation of these two diseases.

Dr. R. M. Sanger,
Orange, N. Y.

I was impressed as I listened to the papers on pyorrhea and kindred matters, that one or two facts must be driven home, especially to the younger minds in the profession. The first of these facts is that the time has come when the leaders in the profession must drive home to your minds the necessity for your education along the higher lines of dental prophylaxis, and through you the public must receive education along the same lines. It is obvious that we cannot work alone; that unless the patient as well as the operator understands the conditions, and is willing to do his or her part in the work, our efforts are all in vain.

Any papers which send us back to our homes with the determination not only to understand ourselves but to make our patients understand, are papers contributing towards higher professional attainment, and I welcome papers of this class as a great benefit to all of us.

There is one thing I want to speak of not along the line of criticism, but because it has been in my mind before, and it is this: Dr. Register referred to a paper read in New York concerning the deleterious and dangerous effect produced by the extraction of abscessed teeth. There were no remedies offered in the paper, or in the quotation by Dr. Register, and the younger men especially are brought face to face with a peculiar problem, to wit, either to leave the abscessed tooth in the mouth, where infection must go on, or else extract the tooth and leave the patient open to pneumonia or some kindred trouble. The teaching should be that while it is good dentistry, the tooth not being savable, to extract it while it is bathed in pus, it is very bad dentistry to dismiss the patient as cured as soon as the hemorrhage has ceased. The practice is all too frequent, and the warning sounded by Dr. Morris and by Dr. Register is well timed.

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**Dr. Wyckoff,
Philadelphia, Pa.**

I understood Dr. Register to say that pneumonia and death often follow the extraction of abscessed teeth, either in an acute or chronic state. In eighteen years of practical experience in that direction, having extracted many thousands of such teeth, I have never yet had that result, and have never heard anyone else say that he had. The cause of an abscessed tooth is the tooth itself, and the proper course of treatment to relieve such a condition is to remove the cause, which cause is the tooth. Of course, with the removal of the cause the condition still exists, but in a modified way, and I believe that if the tooth be extracted properly and the condition thereafter properly treated, no case of pneumonia will ever follow, and I rise at this time to ask if other members of this society and the profession in general have ever had such experience as pneumonia and death following the extraction of an abscessed tooth. If they have, I think it would be well for them to state it, so that we might know of it positively and practically.

**Dr. Benj. Luckey,
Paterson, N. J.**

I want to thank Dr. Register for his scholarly and splendidly presented paper. The only objection I possibly could make to it is that he goes to extreme lengths. I think, with all due respect to Dr. Register, that long papers, no matter how interesting, become tedious on hot nights.

The subject matter and the way in which it was treated will find an echo in almost every experienced breast here tonight, with some exceptions, and that must be so with all papers. No man can write a paper of importance that does not meet criticism from some source.

The gentleman who has just spoken (Dr. Wyckoff) touched in a way that appealed to me strongly upon the subject of the extraction of abscessed teeth.

It has been my practice, and I am willing to stand upon it as a platform, that the proper thing to do is to either cure the abscess, or, if that prove impossible, to extract the tooth. I care not what the surrounding conditions may be. If you had a splinter in your flesh anywhere you would have a foreign body creating inflammation, and, if not removed, suppuration; and if a patient with such a splinter were to go to a surgeon for relief, and the surgeon were to say: "Wait, we must not take out that splinter now, but treat, reduce the inflammation and then take out the splinter," that surgeon would be regarded with ridicule by the patient. The tooth removed, the inflammatory condition almost certainly, barring some constitutional conditions that may exist, will pass away, and the parts heal with readiness and absolute certainty.

Dr. Register may have records, and probably has good reasons for

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making the statement that he has, but it does not appeal to us as our experience. When I say "us" I mean all of us. I do not think there are many men, if any, in this audience tonight, who can conscientiously accept that doctrine. It may be true, though. I have never known such a termination of such an operation, and I seriously doubt if it could be conclusively proven that such a termination was due to such an operation. And I would advise all of the young men that come within the circle of my influence that in treating such cases they first of all do their best to relieve the conditions and save the teeth, and if that be impossible, to extract it without further waiting.

There is one other little point I would like to refer to, and I know it will be of extreme advantage and value to all those who do not know of the practice or who do not follow it in oral prophylaxis. The

older I become the more I bend backwards in a certain degree, in the use of medicaments in the mouth; the more, in other words, do I confine myself to the old and simple remedies. The market is full of expensive preparations for antiseptic treatment of the buccal cavity. Dr. Daly, of New York, some years ago in a conversation here in Asbury Park, gave me the history of his own experience in seven years' continual use of one thing, and interested me to the extent that I was willing to give his treatment a fair trial. The trial convinced me that he was right, and when I tell you tonight that, in my opinion, the cleanest, the easiest, the safest, the simplest and cheapest method of keeping the oral cavity clean, preserving the integrity of the gum tissue, removing inflammation of all the buccal surface and the mucous membrane lining them, is by the use of bicarbonate of soda alone, I tell you a fact that is worth more than all the prepared antiseptics that are sold on the market. Use that as a wash in the strength of a teaspoonful of bicarbonate of soda to an ordinary glass of tepid water three or four times a day if possible. Pyorrhea in many cases has been checked and stopped, and in many other cases absolutely cured where accretions had been previously removed. There is no danger that I know of in the use of it. It is simple, it is cheap, it is effective.

One case in Dr. Daly's practice especially impressed me. The patient was a maiden lady of some sixty years of age, and was on the point of losing her four lower incisor teeth from the ravages of so-called pyorrhea alveolaris. The teeth were loose, and almost at the point where rotary motion would take place. Those teeth were ligated, the accretions thoroughly removed, and she was put on the use of sodium bicarbonate in solution, and also given sodium bicarbonate pure and simple as a powder to clean her teeth with, and after five years of devotion to that practice her teeth were firmer than they had been previous to that time for

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twenty years. That sounds like an astounding statement, but Dr. Daly assured me it was correct.

I have not had any such serious condition to deal with. I have had no such prominent example in my own practice, but that it will do most marvelous work I can cheerfully and firmly attest.

I cannot speak from long years of experience, but rather from an extended period of profound study, and I firmly believe that auto-infection or septic pneumonia or kindred manifestations may result from the assimilation of pyogenic bacteria resulting from the extraction of abscessed teeth, and I firmly believe that you cannot cure that condition after the extraction of the tooth by bathing that locality with an antiseptic wash every hour or every three hours, because I believe the mouth is too fruitful a source of bacterial infection to be kept sterile by any such means.

There are only two points I should like to touch upon in this very interesting and instructive paper. One thing which made a deep impression upon me was the dreadful source of discomfort and misery which comes from bands about roots, to which the essayist referred. So objectionable a proceeding as banding a root ought to be stigmatized by every intelligent dentist. It is almost never necessary, and it is always objectionable.

The second point is this: I heard with amazement that it is supposed that such serious results can intervene from the extraction of an abscessed tooth; but I have heard with still greater amazement that the extraction of an abscessed tooth is to be tolerated. What are we here for; what is our business in life? To take out an inefficient organ which is suffering for a moment with a passing disease? An abscessed tooth is very easily curable, and in heaven's name why should we extract it? The extraction of teeth, gentlemen, it seems to me, is the practice of the inefficient man. I can point to you many practices in Europe where the extraction of teeth is practically unknown. Do you here in this center of enlightenment, do you gentlemen who have been holding abroad the torch of intellectual advancement to the whole world, do you practice the extraction of teeth for abscesses? If so, I must say I am astonished. The curing of an abscess is an extremely simple thing in almost every case, and the preservation of an abscessed tooth is the simple duty of the accomplished dentist.

**Dr. Fossume,
New York.**

I am very glad Dr. Jenkins said what he said, and I only wish he had said more. There are indeed very few septic abscessed roots which cannot be rendered aseptic and restored to health and use-

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fulness, and where they do not yield to such treatment, I mean when the abscess does not heal, the cause will be found to exist outside the apex, viz., roughening of this point from absorption and dissolution, or necrosis of the alveolus. The amputation of the former and the curetting of the latter bring speedy cure, providing subsequent treatment of the wound is surgically aseptic and correct. When for other reasons an abscessed tooth must be extracted, the abscess should be curetted after the removal of the tooth, and the whole wound rendered surgically clean, and should be dressed antiseptically until granulation sets in from the bottom and closes the wound. As dental surgeons we must conduct our operations on scientific principles, so that our patients will not be infected by the removal of abscessed teeth and develop septic or embolic pneumonia.

Dr. R. B. Palmer, I am familiar with the paper read before the society in New York to which reference has been made, and I am firmly convinced that the great difficulty with and the real reason for a great deal of the

trouble of the nature referred to arises from the fact that a great many people fail to properly take care of the oral cavity. Very largely this condition arises from ignorance among the uneducated classes, but it is not entirely confined to such persons. A case came under my observation where an abscessed tooth had been extracted from the mouth of a person who certainly ought to have taken care of his mouth. He could not plead ignorance nor lack of general education. But this is to be said, dental treatment had been given him, but he had never been advised by his dentist of the necessity of keeping the mouth in a hygienic condition, and it was in a very bad state. As I have said, there was an abscessed tooth which was extracted, and inside of three weeks the man died from aseptic poisoning, arising from that abscess. There had been absolutely no care taken of the abscessed condition after the extraction; no syringing of the socket and no protection whatever against poisoning.

It does not seem to me that any of us would leave a case of that kind to the care of the patient alone, without giving him advice as to what should be done.

The suggestion of the essayist seemed to be that abscessed teeth should never be extracted; but I believe the majority of those present agree that if the abscessed tooth is in such a condition that it should be removed, if it were a broken tooth or had gone so far that even Dr. Jenkins would countenance such removal, the sooner such removal is made the better.

The essayist's ideas seem to be from the standard of the physician without knowledge on his part of what we dentists know concerning the syringing and the care of such parts after extraction.

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I touched upon a point in Dr. Register's paper
Dr. R. M. Sanger. which seems to have aroused a little discussion, and I referred to it for the reason that when as a young man I sat in these meetings at the feet of men to whom I looked for education, I accepted what they said as facts. As I listened to the paper, and again to the quotation, I saw put forth a statement without qualification, which was decidedly misleading. To say to us with reference to our daily practice, "Thou shalt not," without giving any reason, is not satisfactory. Dr. Jenkins said that we must almost never extract in such cases. Why did he put in "almost"? Simply because there are some cases which *must* be extracted, and at times when they are not in a high state of ulceration. Those are the cases that I was speaking of, and I do not wish to be misunderstood, nor to have anyone think for a moment that every abscessed tooth that comes into my office is extracted because it is an abscessed tooth. On the contrary, it is our business to save patients' teeth, and sometimes to save the patient's life as well.

I did not intend to say anything on this subject,
Dr. G. S. Stockton, but there is a point that has been brought up that
Newark. should have attention. I knew of a case of abscess in which the wisdom tooth was necessarily removed, and where, if the family physician's advice had been heeded, the patient would soon have been in his grave. The case, however, I want particularly to speak about occurred only a short time ago, where an abscessed tooth was removed and the suppuration continued. The gentleman who made the extraction was sent for, but for some reason failed to attend. The patient, of course, supposed, as many do, that when the cause of pain was removed the trouble was all over. But it went on, and it continued until they sent for another dentist. He recognized at once it was a very serious case, and called for Dr. Dawbarn over the telephone. He, however, was absent from the city, and his assistant was sent. He saw the case, and by the crook of his finger removed all that poor child's lower teeth, every one of them. The case had gone so far that death soon ensued and relieved her from her misery. If that abscessed tooth had been properly treated, that child's life would have been saved.

The medical profession is inclined to joke with
Dr. Wyckoff. the dental profession, and when the question is asked, what the difference is between a medical man and a dentist, it is sometimes answered by saying that the doctor buries his mistake in a hole seven by three, while the dentist requires an acre (acher)! I do not suppose there is any medical man in this world who would intentionally bury a mistake in such a hole; but I believe, at least I hope, there is not a dentist in this room who would extract an abscessed

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tooth if he could save it. I know I would not. I extract thousands of teeth in my own practice, and in cases sent to me by other dentists and by medical men, and I assure you I would never extract a tooth if I could save it. But I am inclined to believe that some teeth must be extracted and should be. I know they must be, or we would not have so many beautifully shaped and tinted teeth among the exhibits in the adjoining room, and I believe with Dr. Stockton that many a life has been lost by the retention of a bad tooth instead of the extraction of it.

In regard to what Dr. Butler said of the disease
Dr. Register. being a systemic condition always, and that the inference I seemed to draw was that the system had nothing to do with the local disease in pyorrhea, let me say that was not what I wanted to convey. What I wished to impress upon you was that this disease always commences locally, and after it has advanced for a very short time, then the system comes into association with it, the two united, for you cannot have a local lesion without bringing the system more or less in sympathy with that condition. Wherever we have a broken continuity we are always open to disease from that condition, which will admit infection into the system, and when that infection enters the system, the systemic condition becomes part of the disease. It may be a local manifestation originally, but it becomes a systemic disease later.

In regard to the extraction of abscessed teeth, I may say that in my practice I extract very few teeth, and never unless it happens to be one I can take out very easily, and is a case beyond cure. But I would like to impress upon the members of this society the desirability of their adopting in their practice the system of compressed air for sterilization, not only for sterilization in regard to their every day work, but there are many other good results which can be obtained from it in everything that relates to tooth pathology. I read a paper last February on that subject, showing that this toxic condition found in the tissues of the teeth can be thoroughly treated through compressed hot air, and the condition be so dehydrated through the instrumentation of germicidal agents as to counteract that condition, and the teeth be brought to a virtually normal state.

Dr. Meeker. What pressure do you use?

The pressure for mouth work I think ought to be about forty or fifty pounds, and it is very nice
Dr. Register. to have it arranged so that you can drop your pressure. In my mouth work I always look over the mouth before proceeding, to see if I can find any condition that might lead up to infection or to a pathology that might be anticipated.

I had a case only a very short time ago of a lady who was erupting a third molar tooth, a wisdom tooth; unfortunately she was not in Philadelphia but lived out of the city, and she sent for someone else, perhaps

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her physician—I do not recall whether it was her physician or a dentist, but whoever it was, he lanced over the erupting molar, which was very much inflamed. In the course of a day or so she began to have trouble with the lymphatic glands of the throat, and from that she went into pneumonia. I feel sure that the infection came from the lesion of the gum, and what I particularly impress upon you is that every one of us, in our mouth work, should never undertake to perform any kind of an operation in the mouth until we first sterilize it. If you sterilize in the first instance you get rid of all possible infection, or at any rate reduce the probability of it to a minimum.

I referred to the paper read in New York, the writer of which is a man who is not hypothetical in his deductions, but one who has experimented and shown by scientific experimentation that what he did was done because there was a positive cause for it, and what we want to do is to remove this cause, and then we have the opportunity of taking out of the mouth conditions at certain times in life, which might prove very dangerous from the environment. Because we have bacteria in the mouth it does not mean we must necessarily have pneumonia or diphtheria; but under certain conditions there is not sufficient resistance, and if at that time there happens to be a little excess of bacterial accumulation there is very likely to be trouble and a great possibility of pneumonia.





It begins to be an open question whether the dentists in this country, by which we mean all of the dentists in this country, really desire an interchange of license between the States. If they do the least that can be said is that no very strenuous effort has been made towards its accomplishment. It has been pointed out more than once, first that the dental laws in the United States practically originated with the dentists themselves; secondly that had these laws been made exactly similar, there probably never would have been any difficulty in obtaining interchange of license; finally, that if interchange of license is to be accomplished it behooves the dentists to introduce similar amendments to the dental statutes in the various States. It has also been pointed out that in each State the dentists who serve on legislative committees appear to be more anxious to originate statutes than to have adopted a statute that is uniform with that of some other State. In evidence of this, we beg the attention of all interested to the following facts: First, let us reprint a Solution of the Interchange Problem, which was editorially offered in this magazine in June, 1903, a part of which reads as follows: Special attention is called to the *'lines in italics.*

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A Possible Solution of the Problem.

“But the only proper demand for interchange comes from men who are legitimately in practice and who may desire to change to another scene of activity. And while still admitting the impossibility of unifying either the laws or the standards, it seems feasible to obtain interchange of license without injustice to either the dental schools or to the general public.

“The National Association of Dental Examiners, while having no control, as a body, over State laws, is integrally composed of separate boards, each of which is charged with certain police power within its own State. These Boards, congregated together in convention, might agree upon a course, and returning to their several States might proceed to act upon the plan chosen. Should this be done this summer at Asheville, *and should an amendment in identical language be introduced next winter into the legislatures of twenty or thirty States, it is conceivable that in five, ten, or twenty of them the amendment might be adopted.* If so, interchange of license would be inaugurated in several States within a year, and the number would be augmented from time to time.

“Such an amendment, however, must be so couched as not to antagonize any just interest, neither the colleges, educational standards, nor the welfare of the people. The following is a proposal which seems to meet these requirements.

“In substance, let it be enacted that any licensee of a State Board, who has been in legal practice within his State for a period of five years (or three perhaps), after having obtained his license, may apply to his own State Board for a certificate stating that he has been in legal practice for the term mentioned, and that he has during that time so conducted himself and his business that his State Board feels justified in recommending him for a license in the State to which he desires to remove. Secondly that upon receipt of such a recommendation from another State Board, an interchange license may be issued.

“The feature of this is its simplicity. The requirement that the candidate for interchange must have been in actual practice for a period of years, obviates the taking of a license in one State for the sole purpose of moving into another, and this is ample protection to the college interests. On the other hand, the fact that the candidate had passed an exam-



ination before a State Board, obtained his license, and then entered into practice for a term of years, so conducting himself that his Board is willing to recommend him to another State, should be ample evidence of his capability, and thus is safeguarded the interests of the community. Finally the amendment is so simple that there should be little difficulty in having it passed in the majority of States, and thus those who for just and proper reason might desire to move their places of residence might be enabled to do so."

**The Asheville
Resolution.**

In July of the same year, before the annual meeting of the New Jersey State Dental Society, Dr. C. S. Stockton advocated a quite similar plan, and, being a member of the National Board of Dental Examiners, introduced his resolution before that body at its annual meeting in Asheville, and finally succeeded in having it adopted, the following being the language of what is now known as the Asheville Resolution:

"Resolved, That an interchange of license to practice dentistry be, and is hereby recommended to be granted by the various State Boards, on the following specific conditions:

"Any dentist, who has been in legal practice for five years or more, and is a reputable dentist of good moral character, and who is desirous of making a change of residence into another State, may apply to the Examining Board of the State in which he resides, for a new certificate which shall attest to his moral character and professional attainments, and said certificate, if granted, shall be deposited with the Examining Board of the State in which he proposes to reside, and the said Board, in exchange therefor, may grant him a license allowing him to practice dentistry."

**First Appeal for
Legislation.**

It will be noted that the above has been quite carefully drawn and adequately covers the situation. The first attempt to incorporate this idea in a dental statute was successful, Congress passing an amendment to the laws governing the practice of dentistry in the District of Columbia which reads as follows:

"Provided, That the Board of Dental Examiners may issue a license to practice to any dentist who shall have been in legal practice for a period of five years or more, upon the certificate of the Board of Dental

ITEMS OF INTEREST

Examiners of the State or Territory in which he practiced, certifying his competency and moral character, and upon the payment of the certification fee, without examination as to his qualifications.”

**Second Appeal for
Legislation.**

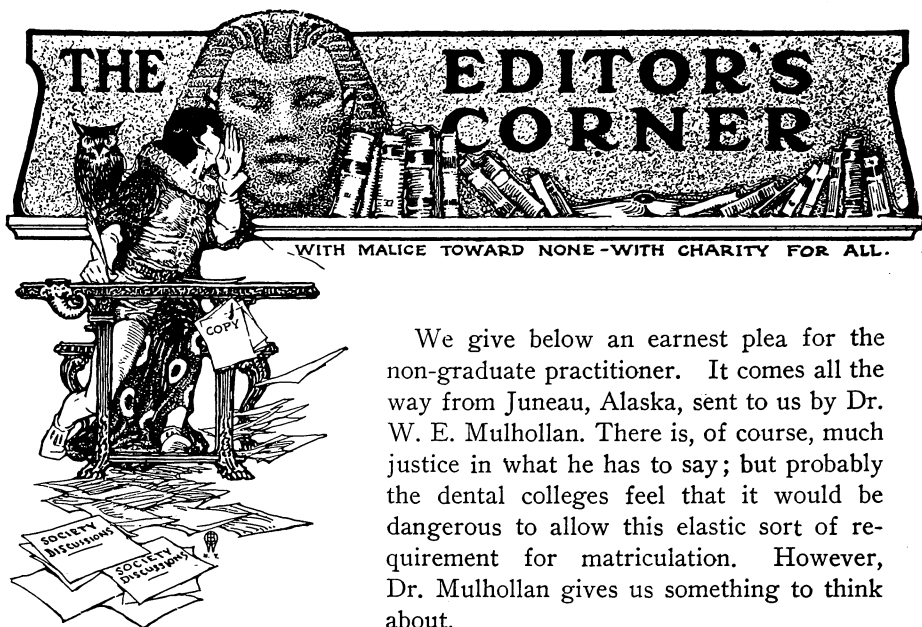
The next appeal to a State legislature for an amendment of this character was in the State of Vermont, where a new statute has recently been enacted in which interchange is provided for in the following language:

“Sec. 9. The Board of Dental Examiners may without examination issue a license to practice to any dentist who shall have been in legal practice in some other State or Territory for a period of at least five years, upon the certificate of the Board of Dental Examiners or a like board of the State or Territory in which such dentist was a practitioner, certifying his competency and that he is of good moral character; and upon the payment of twenty-five dollars.

“Sec. 10. Any duly licensed dentist of this State who is desirous of changing his residence to that of another State shall, upon application to the Board of Dental Examiners, receive a certificate which shall attest that he is a duly licensed dentist in the State of Vermont. The same shall be given without fee.”

It will be observed that both of these legislative amendments, while in language slightly differing from the Asheville Resolution, nevertheless conform to that and to the original suggestion made in this magazine both in spirit and effect. It will be seen that the Vermont Board have so worded their amendment by the addition of a second paragraph that it has legal authority, not only to accept the licenses of other States, but also recommend its own practitioners for reciprocal licenses elsewhere. This seems a wise provision, and it might be well when petitioning other legislatures to follow the Vermont statute.

The moral to be drawn from the above is two-fold. We refer our readers back to the italicized lines, in which we said that should an amendment in identical language be introduced next winter into the legislatures of twenty or thirty States, it is conceivable that in five, ten or twenty of them the amendment might be adopted. This is two years later, and thus far only two efforts in this direction have been made, but both have been successful. Query, Do the State Boards in those States in which no appeal to the legislatures have been made really favor the idea of interchange of licenses?



**A Plea for
the
Registered Dentist.**

Most articles that appear in the journals are partial to the D.D.S.'s. There are many registered dentists who would like to receive the degree of D.D.S. who have served several years as students in dental offices before passing examination of State dental boards, and who now conduct successful offices. In the eyes of the law and the public the D.D.S. and the registered dentists are upon a par.

Not very long ago, in one of the Western States, before the dental board appeared about fifteen dentists, a few of whom were college graduates, and out of fifteen, five passed the examination, and all of the D.D.S.'s failed. Now if one of these D.D.S.'s who failed desires to go and attend and receive an additional degree in any dental college, he can go and receive its degree by simply attending one course; yet one of these five successful registered dentists who proved themselves to be the most enlightened, desires to receive the degree in the same college, he must enter upon the same conditions as the young man fresh from the plow-handles and take a four-year course, no allowance being made for his having served as a dental student for several years or having passed a successful examination before a dental board or his few years' experience in conducting a successful dental office.

Do you call this justice? What a pretty state of affairs would exist if a young man after graduating from a city school, and then upon entering a higher school would be confronted with this: "Yes, we admit you have studied a few years, but we will have to put you in the class with

ITEMS OF INTEREST

those who are just beginning to learn their A B C's." Yet this is just what the dental colleges are doing.

If a man who has studied three or four years as dental student, passed State Dental Board, and with several years of experience, wished to secure the degree D.D.S., he must enter and be rated, so far as his knowledge goes, with the young plow-boy fresh from the farm.

There is not in the whole universe a country or city school, a college, a university or any institution of learning that will not give a student credit for what he knows, for what he has spent several years of hard work learning, when he enters their institute, except the dental. It is claimed that the dental faculties desire to advance the dentistry of today; if so, would it not be well to make some concessions to the registered dentists who will never think of entering a dental college under the conditions of today, for they can enjoy the privilege of practicing without it; whereas, if concessions were made, the colleges would profit, the dental profession would profit, and the patients would profit. You will admit that there are many competent dentists among the registered. We all know that many of the shining lights in the profession today who possess the degree of D.D.S., received the same by having it conferred upon them without attendance at dental college, many hundreds after attending (?) one six months' course, and thousands after two six months' courses. No doubt some of the present dental agitators received their degree under the foregoing conditions. No law, association or faculty can ever stop the present registered dentists from practicing; so would it not be wise for the dental faculties to allow these registered dentists to enter college for the degree upon the same terms that graduates from other colleges enter, that is, by attending one course?

Think of it—men who pose as dental educators, men who occupy chairs in dental colleges, men who receive their degree by attending one or two six months' courses, now requiring registered dentists, with all their years of experience, to study under them for four years—must have been in years gone by that men were much brighter, more capable than at the present day.

If the registered dentist is confronted with this four year course for the money there is in it, would it not be just as profitable for the college to have a special course for such dentists, and charge them well for it, and confer the degree upon them upon one attendance of session?

Dr. D. T. Hill, of Syracuse, Nebr., describes his

**Retention of
Gold
Contour Fillings.**

method of making contour fillings as follows:

"In cases where the incisal corners of the incisors have been broken away, the operator attempts a restoration with his mind full of doubt as to the per-

manency of the beautiful contour he may be able to build up; the doubt being based on the consciousness of a lack of retentive foundation in a living tooth. Some ten years ago I adopted the following plan, and have kept a careful record of each case, that I might judge of its success. The cervical wall offers as firm a foundation as does the same wall of an ordinary approximal cavity; therefore, the incisal edge, owing to its thin, delicate walls, is where the failures originate, being easily broken by pressure on the exposed edge of gold by hard substances during the act of mastication. After preparing the cavity with an undercut under the cervical wall, and the labial and lingual walls dressed down to a solid foundation, without any undercut, select a twist drill a little larger than the pin of an ordinary plate tooth; drill, at right angles, at a point where the enamel of the labial and lingual walls come together, or just above the enamel over the incisal edge of the tooth; drill through nearly to the enamel of the opposite approximal surface. Break a pin from a rubber tooth which has a well rounded head and insert the pin in the drill cavity; cut the pin off if necessary, until the head of the pin comes within the line of the approximal surface which the gold is to occupy. The drill cavity being a little larger than the pin, will allow that portion of the pin entering the cavity to be barbed; fill the drill cavity with cement and press the pin to place; after the cement has set, the filling is built up from the cervical wall in the usual way, finishing the entire filling between the floor of the cavity and the head of the pin, except the gold necessary to cover the head, and to finish the filling in giving correct contour. The pin being set horizontally under the pulp, at as great a distance as the dentin will allow, and being set in cement thermal shocks need but little consideration. I have many fillings secured in this manner, and the uniform success of the idea prompts me to make this report. I see no reason why these vexatious contours cannot be secured on this plan by the use of porcelain as with gold? Suppose the headed pin is set the same as for a gold filling, as described, only much shorter; the space under the head of the pin filled with cement, so the diameter will be as great as the head of the pin, that the foil may be worked over it, and a matrix obtained; after removing the cement from the pin, the porcelain would be held in place as a Davis crown is held."

Dr. H. W. Bates, of Denver, Colo., gives the following as his experience with boro-chlore-tone:

"Very often it is necessary to relieve the pain that follows extractions, and for that purpose I had always used a German product. One day, having occasion to employ the remedy, I found my supply was exhausted, and I resorted to boro-chlore-tone, of which I had a sample that I had received a few days before. It would be stating the case mildly to say that I was surprised at the result. It was all and

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more than I expected. On that and several subsequent occasions it proved perfectly satisfactory, relieving the acute pain when applied on a pledget of cotton which was then placed in the alveolus.

"Finding boro-chloretone to have an analgesic effect in the foregoing instances, I resolved to try it in the treatment of the next case of acute inflammation of the pulp with exposure, which I might encounter. I had an opportunity to do so with gratifying results, putting the powder into the cavity with cotton on pliers.

"Last, but not least, I have found boro-chloretone very serviceable in relieving the sore places caused by the irritation of plates, especially when the gums have not had time to settle before the impression is taken. In these cases I find it very beneficial after scraping or grinding the appliance over the irritated area to relieve the pressure, to then sprinkle boro-chloretone powder liberally on the appliance before returning it to the mouth. The operator will be pleased with the soothing effect thus obtained upon the irritated and inflamed spots, as well as with the heartfelt thanks that the patient is pretty sure to express."

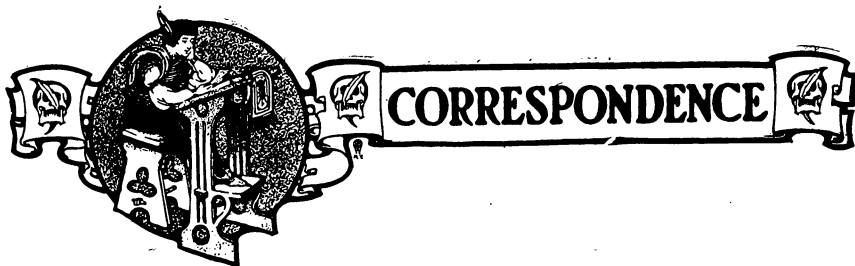
A Case of Malpractice.

Dr. Louis Moderno, of Cambridge, Mass., reports the following case:

"Mrs. F., aged 38, came to my office for the first time in March, 1904. Upon examination of the mouth, all of the superior incisors were found to be abscessed in the chronic stage, each having been filled with gold, cavities of medium size on proximal surfaces, fillings improperly done. The gums showed fistulous openings above each central and lateral incisor, with pus in large quantities upon pressure. Each of these teeth was opened into the pulp chamber from the lingual surface, and after three sittings, during which the usual treatment was applied, the gums healed up and no more pus was present. The pulp chambers were filled and the fillings were done over. On quizzing the patient it was found that a student had done the work before, and had used the automatic mallet with terrific blows. Here is a precaution that should be taken by those who use the same mallet so freely. The burnishing method is the best; not only does it make a better filling in every way, but with greatly less discomfort to the patient. Lots of good teeth are spoiled by the automatic mallet, and this can be easily prevented. Of course the burnishing method is a good deal harder for the operator, but after a little practice is acquired and can be performed very easily."

Illegal Practitioner Convicted.

The State Board of Dental Examiners for the State of Kansas, through the efforts of Dr. J. F. Burket, of Kingman, recently had arrested and fined a man who was practising at Nashville, Kingman County, in violation of the law.



Metallic Stains.

Editor ITEMS OF INTEREST:

Will you kindly inform me, either direct or through the pages of *ITEMS OF INTEREST*, what effect the using of base metal or composition metal pins (German silver, metaloid, etc.) in crowns has on the periodontal membrane? Also of the periosteum of the alveolus? These pins often discolor or oxidize, frequently a green oxidation, and I wish to know what effect that may have on the membranes. Is this discoloration an oxidation, and why does it at times cause the root of the tooth to turn slightly green? Will it cause serious trouble in the tooth and possible loss of the same? Thanking you in advance for this information,

Very truly yours,
St. Paul, Minn.

F. L. WRIGHT, D.D.S.

Editor ITEMS OF INTEREST:

In reply to your favor of Jan. 5, I may say that I have had but little experience with base metals in the mouth, for any other than regulating appliances. I occasionally meet with it, and have noticed the discoloration of roots to which your correspondent refers. I do not recall any case where this seemed to have had a deleterious effect upon either the hard or soft tissues. This is simply negative; it does not warrant an expression of opinion.

Some years ago I frequently used brass and iron screws for retaining large amalgam fillings in posterior teeth, using the small thin screws sold at hardware stores. These were screwed into pulp canals; zinc phosphate cement was used in connection with them. I do not recall any discoloration resulting from this, nor yet any observed objectionable features. The practice was discontinued, not from any fault, but because other methods of retention seemed better.

Brass and Iron.

ITEMS OF INTEREST

Nickel.

Some years ago a dental manufacturer introduced retaining screws made of nickel. I used a number of these, to my sorrow. After a few years amalgam fillings retained by these screws were displaced—the screws had disappeared; nothing remained but a mass fittingly described as “black mud”; sometimes a little shred of the screw was left. They seemed to last, with me, when imbedded in gutta-percha or any of the zinc cements; the manufacturer, however, informed me that the same complaint had been made by others who had used them in connection with the cements. The makers promptly withdrew them, and published the complaining letters as a caution. The objectionable metal in this case was the nickel, a component of German silver and of many base metal alloys advertised for use in the mouth.

Copper.

Copper points and copper wire has long been used in pulp canal filling. I have met with these after they had been long in position, but do not recall noticing any ill effects upon the soft tissues. There is this difference between copper and nickel: copper is oxidized superficially, and the coating of oxide formed seems to prevent further action; nickel is absolutely destroyed; this, however, may be modified when it is alloyed with other metals. I have among my curios a full upper and lower denture made of copper that bears evidence of long use in the mouth. The dentist from whom I obtained it reported that it had been worn for a score of years or more, and was discarded only because changes which had taken place in the form of the jaws required a new denture. I object to the alloys referred to by your correspondent as components of permanent fixtures in the mouth, because I have no confidence in their ability to withstand the destructive agents they are liable to encounter. The greater cost of metals and alloys of undoubted strength and durability is too trifling to warrant the risk attending these substitutes. Regarding their probable effects upon the soft tissues I am without reliable data.

WILLIAM H. TRUEMAN.

Philadelphia, Pa.

Editor ITEMS OF INTEREST:

Cadmium.

DEAR SIR:—The late Dr. Evans, of Paris, introduced a cadmium amalgam about 1848, but it was soon discarded on account of its forming a destructive sulphite, disintegrating the tooth and turning it a bright yellow.

Later, Luther's adamantean white filling, by H. Giles Luther, located in 1863-4 at 84 East Twenty-second street, New York city, was evidently a cadmium compound. He warranted it to contain no silver



CORRESPONDENCE

or other metal liable to oxidize or turn black in the mouth. I used one package of this, early in my practice, and have reason to remember it. It turned the tooth tissue for a considerable area around the filling to about the color and the consistency of a cheese-rind.

The Dawson preparations I do not think contained cadmium. A so-called "Grimes' front tooth amalgam" was a cadmium alloy, and now and again alloys containing a small portion of this metal have been on the market. They usually cause a yellow staining and a softening of the tooth tissue.

I doubt very much whether cadmium is at all in the case. I have seen many fillings of alloys containing cadmium, and I have met with it in fusible metal solders in connection with aluminum dentures, and in all it has presented its characteristic yellow oxidations.

Copper and nickel both give a green salt. Nickel salts are a light green; whether they would stain tooth tissue I do not know. Copper salts do stain teeth a dark gray or yellow green, sometimes inclined to blue. I have seen this in connection with copper amalgam. It was said not to stain the teeth—but it did—at times—very often if there was any gold in contact with it. I tried lining cavities with gold foil, and then filling with copper amalgam, and within two years they all were stained through and through a dirty green. I have had it to occur when there was no gold present, sometimes green, and at other times more inclined to blue, and I frequently see filling of this same copper amalgam that I have had under observation more than a dozen years where there is not the slightest staining, although the fillings themselves are very black. Copper amalgam fillings which became quickly black were said to last better than those which kept their color—with that I agree. I found, however, no relation between color changing and staining. I found it so very uncertain, a fellow did not know what it was going to do until it did it, that I discarded it, notwithstanding that in some cases it proved excellent.

It would be well if the gentleman would have the metals he has been using examined, so as to see what they contain; so many substitutes for the precious metals have lately been introduced under fancy and misleading names, it may be an unlooked for combination. It will be of interest to know what cement was used in cases where the staining occurred.

Yours respectfully,

WILLIAM H. TRUEMAN.

No. 33 Church street, Germantown, Pa.,
January 10, 1905.

Editor ITEMS OF INTEREST:

DEAR SIR:—I have used German silver, Wessel's silver (formula a trade secret), platinoid (a German silver with tungstate a component),

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and nickel coin. I have not noticed any of these to have the least effect upon the soft tissues, nor any prejudicial effect upon the teeth or roots with which they have been in contact. I have discarded them, and also platinized silver, as dowels in crown and bridgework because they do not readily unite with solder. The solder shows a tendency to flow around them without uniting. I have found that a dowel soldered to a cap covering a root, for a Richmond crown, for instance, may seem to be soldered strongly; if, however, I have to file the portion projecting through level with the cap, as is frequently necessary when straight pin teeth are used, when the tooth is soldered to the cap the solder does not take hold of the filed surface of the dowel, and with a very slight strain the dowel gives way. I prefer straight pin teeth, believing them much stronger than cross pin. With platinized gold, platinum, or platinum and iridium I have no trouble; the solder unites with them, and the dowel is held securely, although it may not more than pass through the thin metal of the cap. For a time I used these metals freely, and in many cases they have done well; but in this class of work especially I am not willing to take risks, and have therefore discarded them for all permanent work in the mouth.

For regulating appliances they are excellent; I make free use of them, and have no trouble in soldering them securely with either gold or silver solder. I presume that the reason that solder will not take hold of the end of the dowel is due to difficulty in making it sufficiently hot when buried in the investment. It has not so strong an affinity for the solder as gold or platinum. If the dowel projects through the cap, even a thirty-second of an inch, it will usually be strongly held; I prefer, however, to use a metal not so exacting in its requirements. It is well worth the difference in the expense to feel confident.

I have not noticed any discoloration of teeth or roots following the use of these base metals as dowels.

Yours respectfully,

NAAMAN H. KEYSER.

Dental Titles in Germany.

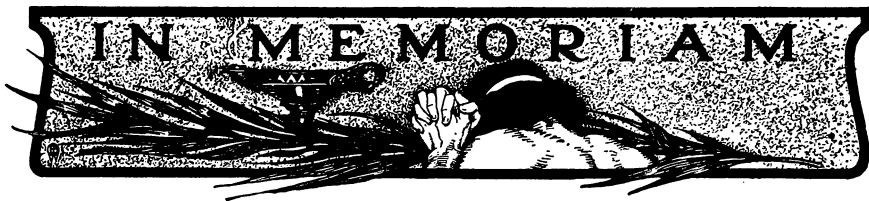
January 30, 1905.

Editor of ITEMS OF INTEREST:

In your issue of January, 1905, on page 10 you make me say, "In two very important cases in the highest court of Germany, rulings were given that make legal the use of title 'Doctor Chirurgiæ Dentariæ.'" It should read "illegal," the Academic Latin title being the objection.

Three Rivers, Que.

J. H. WORMAN.



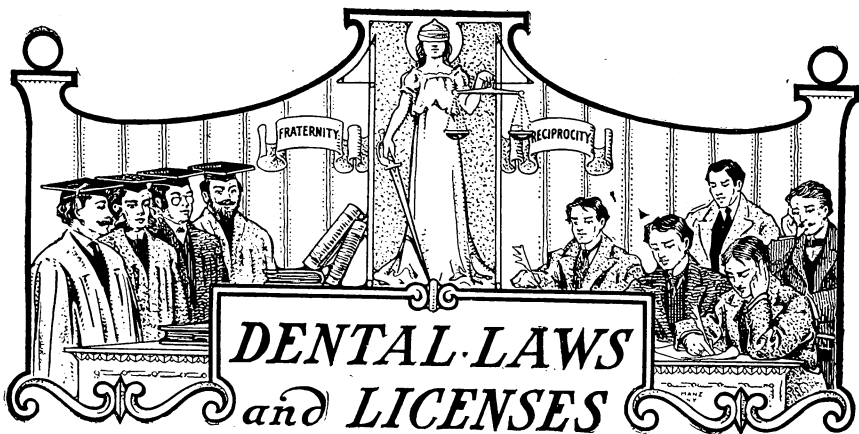
N. S. Towner.

There was probably no man in the dental depot business more popular with the dentists of his locality than Mr. N. S. Towner, the manager of one of the branches of the S. S. White Dental Mfg. Co., in New York, and it was with a sense of shock that the many hundreds of his friends in the dental profession learned of his sudden death by heart failure while on his way to business.

Norman Scott Towner was born in Wilmington, Del., on January 27, 1847. His father died during his infancy, and at about the age of four his mother and himself moved to Brooklyn, N. Y., where he resided several years, removing later to New York City. He entered the employ of S. S. White, the founder of the present S. S. White Dental Mfg. Co., Sept. 22, 1862, and continued in the business uninterruptedly till the day of his death. He had never married, probably because of the responsibility he felt for the care of his mother, during the years when he might have contemplated marriage, and after her death, which occurred in 1886, continued in the single state.

He was a man of sterling qualities, being admired for his reliability in all matters and for his strict integrity.





Reciprocal Laws.

By WILL S. KELLY, D.D.S., Wilkesbarre, Pa.

I am glad to see a revival of the subject of interstate reciprocal laws. Believing that each State has enacted dental laws for the protection of its citizens from being preyed upon by incapable men, calling themselves dentists, and knowing that the professional part of the science has been so largely abused, it is but natural that they should be wary about breaking over the lines bordering upon reciprocity. I think the time has come, however, when this matter should be more deeply studied. This subject was closely outlined by me, in a paper read before the Susquehanna Dental Society at Easton, Pa., May 14, 1903, and was published in the *Dental Brief* shortly thereafter.

The United States is one great country. The citizens of the United States are one great family, and the United States their home, and our constitution guarantees equal rights to all. Beneficial interests should be common throughout this great land of homes, and freedom from oppression. It is true that all people do not possess the same degree of intelligence, or manipulative ability, or the same energy; but we must confess that environments are somewhat different. As we all are, or should be working for the best interests of our country and of mankind, why not get together and adopt some plan which will give to all certain deserved privileges, and at the same time protect our brethren from the ravages of the incompetent. It is but a simple matter to adopt an educational examina-



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tion of a high standard for all States, so that any man who successfully meets the requirements of his own State should be permitted to practice his chosen profession in any State of the Union. There would be no sectional bitterness then, and we, as members of a large family, would be accorded equal protection. It is absurd to say or think that the citizens of one State are deserving of better treatment than those of another. They all deserve the best obtainable, and this position can only be reached by reciprocal laws on the aforesaid lines, free from prejudices. It is unfair and un-American to say that a man is good enough to practice in Pennsylvania or New York, and not good enough to practice in any or every other State in the Union, without again being placed upon the rack of technical examinations, after years of hard work and a consequent forgetfulness of unnecessary things, such as chemical analyses, reactions, etc. We have no doubt that most dental examining boards have discretionary powers, and are more anxious to learn of the capability of the examined as a dentist than of his technical knowledge, but that does not modify the principle of unjustness in our own domain. Let those in authority on such subjects in each and every State meet on neutral grounds, and form themselves into a court and jury. If our examinations are of a high standard, and adopted everywhere, it will simplify matters, and add more luster and dignity to our profession, and people will not be so prone to say, "Oh, he is only a dentist!"

Corrections and Additional Information.

The Secretary of the Maryland State Board of Dental Examiners notifies us that the Board has recently met and definitely decided on the 15th-16th of May for holding the spring examinations in Baltimore. The fall examinations will occur Nov. 6 and 7.

The State of Vermont has enacted a new law, one feature of which is to empower the State Board to make interchange of licenses in accordance with the Asheville Resolution. The Secretary has now furnished us with full information in regard to their requirements, which will be found under Vermont.

We have also obtained the requirements for Delaware, Florida, Illinois and South Carolina, which will be found in the proper places.

The Secretary of the New York Board of Regents writes that interchange exists between New York and Pennsylvania, a fact which had been omitted from last month's report. The same is true of Tennessee, which interchanges with New Jersey, this fact having been omitted by oversight.



The New Jersey State Dental Commission have appealed to the State legislature for amendment to the dental statute, the most important and far reaching of which asks for the abolition of the "incorporation by two or more persons of a company or association for the practice of general dentistry, because of the logical fact that examining boards cannot examine a company or corporation to establish its fitness to practice dentistry." This seems to be a very valuable idea well worth the consideration of State Boards throughout the country.

Requirements for Licenses and Dates of Examinations.

Secretaries of State Boards are requested to keep us constantly posted in regard to dates and places of examinations or changes in their laws that this department may be kept up to date.

Examination required, with or without diploma.

Alabama. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations annually on the first Monday before the second Tuesday of each year. Secretary, Dr. Thomas P. Whitby, Selma, Ala.

Secretary, Dr. Wm. G. Lentz, Fleming Block, Phoenix, Ariz.

Arizona. Examination with or without diploma; applicants must attain an average of 75 per cent to pass. Examination fee not stated. No special examination granted to practitioners already in practice; no temporary licenses. Oklahoma reports interchange with Arkansas, but the secretary of Arkansas reports no interchange as yet. Examination in May at Texarkana. Secretary, A. T. McMillin, 5th and Main streets, Little Rock, Ark.

Examination required with or without diploma.
California. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations, San Francisco, June 12; Los Angeles, June 19. Secretary, C. A. Herrick, Jackson, Amador Co., Cal.

Examination granted to holders of diploma only.
Colorado. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations first Tuesdays of June and December, at Denver. Secretary, Dr. M. S. Fraser, 407 Mack Building, Denver, Colo.

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Connecticut. The Secretary of the Connecticut Board furnished the information asked, in the form of a circular, of which the following is a copy.

Questions and answers relating to the examinations for license to Practice dentistry in Connecticut:

Ques. Can a man who has studied under a preceptor for three years take the examination? Ans. Yes.

Ques. Can a man who has been in actual practice three years or more take the examination? Ans. Yes.

Ques. Can a graduate of a reputable dental college take the examination? Ans. Yes.

Ques. Can a senior student take the examination? Ans. No.

Ques. Will the Commissioners furnish questions asked in other examinations? Ans. No.

Ques. Will the Commissioners issue a temporary permit to practice dentistry, pending the regular examination? Ans. No, not under any consideration.

Ques. Will the Commissioners grant private examinations? Ans. No.

Ques. Will the Dental Commissioners of the State of Connecticut accept a license from another State, in lieu of an examination? Ans. No.

Ques. Will Connecticut interchange licenses with other States? Ans. No, there is no provision in Connecticut's Dental Law allowing an interchange of licenses.

Examination fee, \$25.

The Dental Commissioners of the State of Connecticut hereby give notice that they will meet at Hartford, on Thursday, Friday and Saturday, May 25, 26, 27, 1905, respectively, to examine applicants for license to practice dentistry, and for the transaction of any other proper business.

The practical examination in operative and prosthetic dentistry will be held Thursday, May 25, at 8:30 a. m., in Putnam Phalanx Armory, corner Haynes and Pearl streets.

The written theoretic examination will be held Friday and Saturday, May 26 and 27, at the Capitol.

All applicants should apply to the Recorder for proper blanks, and for the revised rules for conducting the examinations.

Application blanks must be carefully filled in and sworn to, and with fee, twenty-five dollars (\$25), filed with the Recorder on or before May 15, 1905.

By direction of the Dental Commissioners.

J. TENNEY BARKER, Recorder,
Wallingford, Conn.

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Delaware. Examination and diploma required in all cases. Examination fee \$10; \$1 for a certificate. All applicants for certificates come under the same conditions. No interchange of license with any other States. Examinations first Wednesdays in January, April, July and October. Place of meeting given when applicant writes for the information. Secretary, C. R. Jefferis, New Century Bldg., Wilmington, Del.

District of Columbia. Examination with or without diploma. Examination fee \$10. Reciprocal interchange of license with the State of New Jersey in accordance with the provisions of the Asheville resolution. Examinations semi-annually. Secretary, Dr. W. E. Dieffenderfer, Colorado Bldg., Washington, D. C.

Florida. Examination required with diploma. Examination fee \$10. No special examination for practitioners already in practice. Interchange of license with States whose laws are equal to Florida. Examination Monday, May 29, at Seabreeze. Secretary, W. G. Mason, Tampa, Fla.

Idaho. Examination required with or without diploma. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any States. Secretary, Dr. W. W. Paling, Mackey, Idaho.

Illinois. Examination required without a diploma. Diploma required but no examination. Examination fee \$10. No special examination required for practitioners already in practice. No interchange of license with any other State. Examinations twice each year, usually in May and October. Exact date not yet known for 1905. Secretary, Dr. J. G. Reid, 67 Wabash Avenue, Chicago, Ill.

Indiana. Applicants for examination must possess diploma from recognized college or must have had five years' dental practice under a reputable practitioner of this State. Examination fee \$20. No special examination granted to practitioners already in practice. Reciprocal interchange of license with the State of New Jersey in accordance with the provisions of the Asheville resolution. Examinations, June 13, at Indianapolis. Applications for examinations must be made to the secretary on June 8th. Secretary, Dr. F. R. Henshaw, Middletown, Ind.

Iowa. Examination required with diploma. Examination fee \$20. No special examination granted to practitioners already in practice. No interchange of

ITEMS OF INTEREST

license with any States. Examination May 2, 3, at Capitol Building, Des Moines. Secretary, Dr. E. D. Brower, Le Mars, Ia.

Kansas. No examination required if applicant has a diploma from a reputable college; otherwise examination required. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations, early part of May at Topeka. Secretary, Dr. M. I. Hults, Hutchinson, Kan.

Kentucky. Examination required with diploma. Examination fee \$20. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations first Tuesday in June and December in Louisville. Secretary, Dr. C. R. Shacklette, 628 Fourth Avenue, Louisville Ky.

Louisiana. Examination required with diploma. Examination fee \$25, payable in advance. No special examination granted to practitioners already in practice. No interchange of license with any States—Board has the matter under consideration. Examinations twice annually in New Orleans, first examination on the day following the commencement exercises of the New Orleans College of Dentistry, which this year will be on May 4th. Second examination occurs on the first Tuesday after the third Monday in October, this year, Oct. 17th. Secretary, treasurer and attorney, L. A. Hubert, 137 Carondelet street, New Orleans, La.

Maine. Examination required with or without diploma. Examination fee \$20. No special examination granted to practitioners already in practice. No interchange of license with any States. Examination, June 21, 22. Secretary, Dr. Dana W. Fellows, Portland, Me.

Maryland. Examination required with diploma. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any State. Examinations occur twice annually in Baltimore. In 1905 May 15, 16, and Nov. 6, 7. Secretary, F. F. Drew, 701 N. Howard street, Baltimore, Md.

Massachusetts. Examination required with or without diploma. Examination fee \$20 for first examination, subsequent examinations \$5. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations March 8, 9, 10; June 21, 22, 23, and October 25, 26, 27. Secretary, Dr. G. E. Mitchell, Haverhill, Mass.

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Michigan. Examination required with or without diploma. Examination fee \$10. Practitioners already in practice may have a special examination before any member of the Board which will enable him to practice until the next regular meeting of the Board, when a regular examination must be taken. Reciprocal interchange of license with New Jersey in accordance with the provisions of the Asheville resolution. Examinations, May 16, at Ann Arbor. Secretary, Dr. C. H. Oakman, 29 State street, Detroit, Mich.

Minnesota. Diploma must be presented from a dental college in good standing or satisfactory evidence must be given of having been engaged in the practice of dentistry as early as April, 1879. Examination fee \$10. No special examination granted to practitioners already in practice, and the Board has no power to grant temporary license of any kind. No interchange of license with any States. Examinations first Tuesday in April and October. Special session held in June. Held at Dental Department of the State University at Minneapolis. Secretary, C. H. Robinson, Wabash, Minn.

Mississippi. Examination required with or without diploma. Examination fee \$10. Practitioners already in practice will be granted an examination by any member of the Board, who is authorized to issue a temporary license which will be valid until the next succeeding meeting of the Board. Only one temporary license shall ever be issued to the same applicant. Secretary, Dr. P. P. Walker, Brandon, Miss.

Missouri. Examination with or without diploma. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations second Tuesday in May and October at the Senate Chamber at Jefferson City. Secretary, S. C. A. Rubey, Clinton, Mo.

Montana. Examination with or without diploma. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any States. Examination June 20. Secretary, D. J. Wait, Helena, Mont.

Nebraska. Registers diploma from recognized colleges without examination, all others required to take examination. Examination fee \$10; fee for registering diploma \$2.50. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations—no special date, but are set when application is made. Secretary, Dr. D. A. Meese, Auburn, Nebr.

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Nevada. Examination required if without diploma. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Secretary, C. A. Coffin, Reno, Nevada.

New Hampshire. Examination required with or without diploma. Examination fee \$10. No special examination granted to practitioners already in practice except by agreement of the full Board. No interchange of license with any States. Examinations, June 13, 14, 15 at the New Manchester House, Manchester. Secretary, A. J. Sawyer, Manchester, N. H.

New Jersey. Applicant must be a graduate of a reputable dental college and hold a high school diploma or a certificate from the State superintendent of public instruction, Professor Baxter, Trenton, N. J. Examination fee, \$25. Reciprocal interchange of license with Utah, Tennessee, Indiana, Michigan, in accordance with the provisions of the Asheville resolution, and by special agreement with New York. Examinations July 11, 12, 13, and December 12, 13, 14. Theoretical branches in the Assembly Chamber, Trenton, N. J. Practical operative work at the office of C. S. Stockton, 7 Central avenue, Newark, on a date assigned by him. Practical prosthetic work at the office of Dr. A. Irwin, 425 Cooper street, Camden, N. J., on a date assigned by him. Secretary, Dr. Charles A. Meeker, 29 Fulton street, Newark, N. J.

New York. Diploma from a registered school is necessary for admission to the dental licensing examination. Applicants who have had six years' practice in dentistry may on unanimous recommendation of the Board receive a license to practice in this State provided they meet the necessary professional and preliminary requirements. Examination fee \$25. Reciprocal interchange of license with New Jersey and Pennsylvania. Examinations, May 16, 17, 18, 19; June 20, 21, 22, 23; September 26, 27, 28, 29. Chief, Charles F. Wheelock, Examinations Division, New York State Education Department, Albany, N. Y.

North Carolina. Examination with or without diploma. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with other States. Examination—June 26, 27, 28 at Waynesville. Secretary, R. H. Jones, Winston-Salem, N. C.

North Dakota. Examination required with or without diploma. Examination fee \$10; additional fee for license, \$5. No special examination granted to practitioners al-

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ready in practice. No interchange of license with any States. Examination, second Tuesday in July. Secretary, H. L. Starling, Fargo, N. D.

Ohio. The Board will register without examination all graduates of the Ohio colleges who make proper application and pay the required fee of \$10 prior to the June, 1905, session of the Board; all other applications must be graduates and pass examination before they can practice legally in Ohio. Examination fee \$20; registration fee \$10. There is an exemption clause which permits the Board to register a person who has been in practice in the State of Ohio continuously since January 1, 1903; this must be verified by evidence. Examinations for 1905 will be held June 27, 28, 29 and November 28, 29, 30, in Columbus. Application should be filed with the secretary 10 days prior to examination. Secretary H. C. Brown, 185 East State street, Columbus, Ohio.

Oklahoma. Examination required if without diploma. Examination fee \$10. No special examination granted to practitioners already in practice. Reciprocal interchange of license with Arkansas. Examination—May 10. Secretary, A. C. Hixon, Guthrie, Okla.

Oregon. Examination required with diploma. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Examination May 8th; also in November in Portland. Secretary, O. D. Ireland, 614 Dekum Building, Portland, Ore.

Pennsylvania. Examination required with diploma. Examination fee \$15. No special examination granted to practitioners already in practice. Reciprocal interchange of license with New York. Examinations in June and December, 1905. Secretary, C. N. Schaeffer, Harrisburg, Pa.

Rhode Island. Examination in all cases. Examination fee \$20. No special examination granted to practitioners already in practice. In regard to interchange the Board has recommended an amendment to the law giving the board discretion. Examination June 27, 28, 29, Providence. Secretary, P. J. Heffern, 255 Main street, Pawtucket, R. I.

South Carolina. Examination with or without diploma. Examination fee \$15. No special examination granted to practitioners already in practice. No interchange of license with any States, but is not opposed to a satisfactory plan of exchange. Examination July 14, at White Stone Springs. Secretary, Dr. B. Rutledge, Florence, S. C.

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South Dakota. Applicants for examination must have diploma or must have had three years' practice immediately preceding examination. Examination fee \$10; license fee \$5. No special examination granted to practitioners already in practice. No interchange of license with any States. Examination, July 11, Mitchell. Secretary, G. W. Collins, Vermillion, S. D.

Tennessee. Registers diploma without examination and examines all others. Examination fee \$5. No special examination granted to practitioners already in practice. Reciprocal interchange of license with Tennessee, in accordance with the provisions of the Asheville Resolution. Examination, Memphis, Feb. 21, 22, 23. Secretary, F. A. Shotwell, Rogersville, Tenn.

Texas. Registers diplomas and examines all others. Examination fee \$10. Temporary licenses granted to holders of diplomas between meetings of the Board; good until the following meeting. Temporary licenses granted to others after an examination by any member of the Board. Good until the next meeting of the Board. Fee for temporary license \$2. Examination, May, 1905. Secretary, C. C. Weaver, Hillsboro, Texas.

Utah. Examination required with or without diploma. Examination fee \$25. No special examinations granted to practitioners already in practice. Reciprocal interchange of license with New Jersey in accordance with the provisions of the Asheville resolution. Examination not yet fixed. Usually April and October. Secretary, H. W. Davis, 511-513 McCormick Block, Salt Lake City, Utah.

Vermont. Examination required in all cases. Examination fee, \$25. No special examination granted to practitioners already in practice. Board is empowered to make interchange of license, in accordance with the Asheville Resolution. Secretary, G. F. Cheney, St. Johnsbury, Vt.

Virginia. Examination required with or without diploma. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Examination second Tuesday in June, at Richmond, Va. Secretary, R. H. Walker, Norfolk, Va.

Washington. Examination required with diploma. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations in May and November; this year May 22, at Vancouver. Secretary, W. A. Fishburn, Ellensburg, Wash.

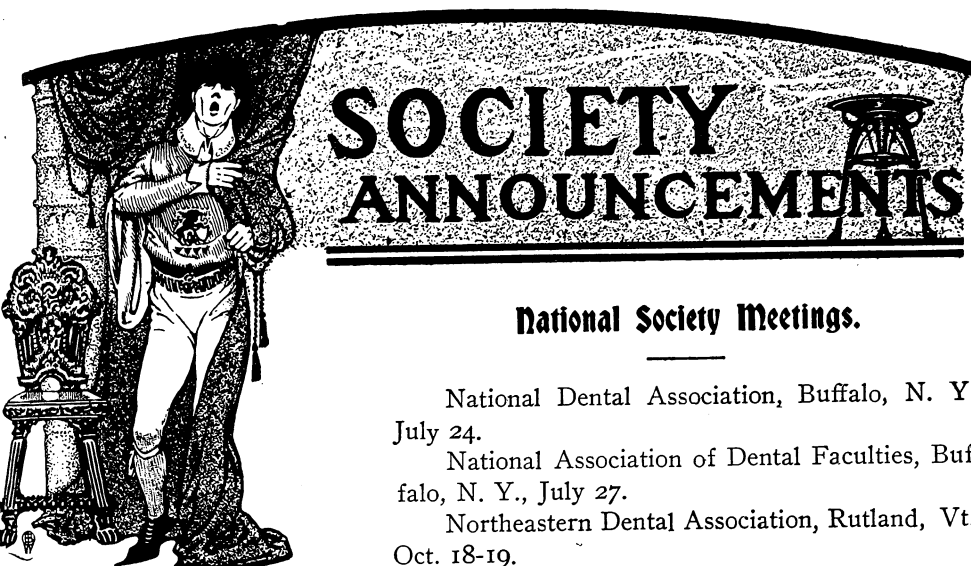


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West Virginia. Examination required with or without diploma. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Examination, first Wednesday in June. Secretary, H. M. Van Voorhis, Morgantown, W. Va.

Wisconsin. Examination required with diploma. Examination fee \$10. Dentists who have practised for four years or have been apprenticed to a reputable dentist for five years are entitled to examinations. No special examination granted to practitioners already in practice. No interchange of license with any States. Examination in June. Secretary, J. J. Wright, 1218 Welles Building, Milwaukee, Wis.





National Society Meetings.

- National Dental Association, Buffalo, N. Y.,
July 24.
National Association of Dental Faculties, Buf-
falo, N. Y., July 27.
Northeastern Dental Association, Rutland, Vt.,
Oct. 18-19.
-

State Society Meetings.

- Connecticut State Dental Association, New Haven, April 18-19.
Delaware State Dental Society, April 5.
Florida State Dental Society, La Breeze Beach, May 31.
Illinois State Dental Society, Moline, May 9, 10, 11.
Indiana State Dental Association, Detroit, Mich.
Iowa State Dental Society, Des Moines, May 2, 3, 4.
Kentucky Dental Association, Lexington, May 15, 16.
Maine Dental Society, Portland, July 18, 19, 20.
Massachusetts Dental Society, Boston, June 7, 8.
Minnesota State Dental Association, Minneapolis, June 1, 2, 3.
Mississippi Dental Association, Jackson, April 18, 19, 20.
Nebraska State Dental Society, Lincoln, May 16, 17, 18.
New Jersey State Dental Society, Asbury Park, July 19, 20, 21.
New York State Dental Society, Albany, May 12, 13.
Pennsylvania State Dental Society, Philadelphia, June 27, 28, 29.
South Dakota State Dental Society, Mitchell, June.
Texas State Dental Association, Austin, May 18, 19, 20.
Vermont State Dental Society, Rutland, March 15, 17.
Wisconsin State Dental Society, Oshkosh, July 18, 19, 20.



Lewis and Clark Dental Congress.

The meeting of the Lewis and Clark Dental Congress, to be held in Portland, Ore., July 17, 18, 19, 20, 1905, promises to be the largest ever held on the Pacific Coast.

The Committee on Clinics asks for voluntary clinics or table demonstrations from members of the profession, and suggests that notice of the same be sent the Committee as soon as possible.

In order that the program be complete, names of clinicians and clinics must reach the chairman not later than June 15.

C. H. NOTTAGE, *Chmn. Com. on Clinics*,
Oregonian Bldg., Portland, Ore.

J. D. MYER, Tacoma, Wash.

F. I. SHAW, Seattle, Wash.

A. STARK OLIVER, Spokane, Wash.

C. E. POST, San Francisco, Cal.

CLAUD W. GATES, Salt Lake City, Utah.

J. H. HOLMES, New Westminster, B. C.

A. W. CATE, Boise, Idaho.

W. H. BARTH, Great Falls, Mont.

GENERAL COMMITTEE.

Norris R. Cox, D.D.S., *Chmn.*, Abington Bldg., Portland.

Arthur W. Chance, D.D.S., M.D., *Sec'y*, 809-10 Dekum Bldg., Portland.

OREGON.

STATE DENTAL ASSOCIATION.—E. G. Clark, Norris R. Cox, W. A. Cumming, Walter F. Lewis, G. H. Nottage, Arthur W. Chance, Portland.

STOMATOLOGICAL CLUB.—S. J. Barber, J. B. Keefer, Geo. A. Marshall, Portland.

CALIFORNIA.

STATE DENTAL ASSOCIATION.—H. B. Carlton, Jas. G. Sharp, C. E. Post, San Francisco.

SOUTHERN CALIFORNIA DENTAL ASSOCIATION.—L. E. Ford, Ray D. Robinson, Los Angeles; G. A. White, Santa Barbara. Los Angeles Alumni—H. D. Regua, Los Angeles.

SAN FRANCISCO DENTAL ASSOCIATION.—A. M. Flood, F. C. Pague, San Francisco; J. S. Marshall, Presidio.

ALAMEDA COUNTY DENTAL SOCIETY.—J. Loran Pease, H. G. Chappel, John S. Engs, Oakland.



WASHINGTON.

STATE DENTAL ASSOCIATION.—C. S. Irwin, Vancouver; E. S. Barnes, C. A. Custer, Seattle.

SEATTLE DENTAL CLUB.—E. B. Edgers, J. W. Ball, Gregor McGregor, Seattle.

TACOMA DENTAL CLUB.—B. S. Scott, J. M. Myer, R. S. Williams, Tacoma.

SPOKANE DENTAL CLUB.—A. Stark Oliver, Chas. C. Mann, Jos. W. Downing, Spokane.

IDAHO.

STATE DENTAL ASSOCIATION.—J. B. Burns, Payette; J. H. Lewis, Nez Perces; E. H. Maberly, Boise.

MONTANA.

STATE DENTAL ASSOCIATION.—J. B. Keenan, A. C. Sandberg, Butte; R. M. Leslie, Great Falls; T. M. Hampton, J. D. Sutphen, Helena; Joseph Oettinger, Missoula.

UTAH.

STATE DENTAL ASSOCIATION.—W. G. Dalrymple, Ogden; W. Lean Ellerbeck, E. A. Tripp, Salt Lake,

NEVADA.

J. C. Hennessy, Reno.

EXECUTIVE COMMITTEE.—Norris R. Cox, Portland, Chmn.; C. S. Irwin, Vancouver, Wash.; Arthur W. Chance, Portland, Sec'y; Jean Cline, E. G. Clark, Portland.

COMMITTEE ON ESSAYS.—S. J. Barber, Portland, Chmn.; C. L. Goddard, San Francisco; B. F. Eschelman, Tacoma.

COMMITTEE ON CLINICS.—G. H. Nottage, Portland, Chmn.; J. M. Meyer, Tacoma, Wash.; C. E. Post, San Francisco; A. Stark Oliver, Spokane, Wash.; Claude W. Gates, Salt Lake, Utah; J. H. Holmes, New Westminster, B. C.; A. W. Cate, Boise, Idaho; W. H. Barth, Great Falls, Mont.; F. I. Shaw, Seattle, Wash.

COMMITTEE ON EXHIBITS AND MANUFACTURING CLINICS.—W. F. Lewis, Portland, Chmn.; Woodard, Clarke & Co., Archer & Schanz Co., John Welch Dental Depot, Oregon Dental Supply Co., Portland.

BRITISH COLUMBIA.

BRITISH COLUMBIA DENTAL ASSOCIATION.—R. Ford Verrinder, Richard Nash, Victoria; K. C. MacDonald, Grand Forks.



American Dental Society of Europe.

The next annual meeting of the American Dental Society of Europe will take place at Geneva, Switzerland, April 21 to 24 next. A cordial invitation is extended to members of the profession.

CHARLES J. MONK, *Hon. Sec'y.*

National Association of Dental Examiners.

The annual meeting of the National Association of Dental Examiners will be held at Buffalo, N. Y., commencing 10 a. m., July 24, and continuing until adjournment. The hotel and assembly rooms for holding session will be announced later. Arrangements for members in the East have already been made with the Lackawanna R. R. for reduced excursion rates on fast *de luxe* trains leaving New York 10 a. m., 6:10 p. m., 8:45 p. m., and 2 a. m.

29 Fulton street, Newark, N. J. CHARLES A. MEEKER, D.D.S., *Sec'y.*

Vermont State Dental Society.

The next meeting of the Vermont State Dental Society will be held at Rutland, March 15-17, 1905.

GRACE L. BOSWORTH,
Corresponding Sec'y.

The Seventh District Dental Society.

Annual meeting, Chamber of Commerce Rooms, Rochester, N. Y., March 28 and 29.

I. C. EDINGTON, *Chmn. Bus. Com.*

Rochester, N. Y.

New York State Dental Society.

The next meeting of the Dental Society of the State of New York will be held in Albany, N. Y., May 12 and 13, 1905. We expect a large attendance. Papers will be read by Dr. E. S. Darby, Philadelphia; Dr. S. G. Perry, New York; Drs. J. P. Buckley, W. T. Reeves, and A. H. Peck, Chicago. The clinic committee, of which Dr. F. W. Proseus is chairman, is hard at work arranging an interesting programme.

114 E. 60th street, New York.

W. C. DEANE, *Sec'y.*



Connecticut State Dental Association.

The forty-first annual convention will be held in the Y. M. C. A. building, New Haven, Conn., Tuesday and Wednesday, April 18 and 19, 1905. The members of the New Jersey State Dental Association and the First District Dental Society of New York City are invited to attend.

The program will be as follows:

Dr. Sol. Freeman, New York City—"The Use of Compressed Air in Operative Dentistry."

Dr. Joseph Head, Philadelphia—"The Best Methods of Inserting Adhesive Gold and Amalgam Fillings."

Dr. C. N. Johnson, Chicago—"Differences in the Preparation of Cavities for Fillings and Inlays."

Dr. M. L. Rhein, New York City—"The Technic of Pulp Removal and Root Treatment Associated Therewith."

Dr. J. Tenney Barker, Wallingford, Conn., Recorder State Board of Dental Examiners—"Dental Legislation."

Dr. L. Ashley Faught, Philadelphia—Subject to be announced.

Also a large number of clinics.

Bridgeport, Conn.

F. HINDSLEY, *Sec'y.*

New York College of Dentistry Class of 1894.

The class of 1894 of the New York College of Dentistry will meet at the Arena Restaurant, New York, on the evening of March 13, to celebrate the eleventh anniversary of its graduation. All members of the class are invited to participate.

JAMES MCKENZIE, D.D.S., *Sec'y.*

57 West 84th street, New York, N. Y.

The New York Institute of Dental Technique.

At the annual meeting of the New York Institute of Dental Technique, held January 24 at the Hotel Chelsea, Dr. E. W. Harlan read an interesting paper and demonstrated his method of making a perfect fitting Richmond band. Dr. J. H. Tuttle demonstrated his method for making a perfecting Davis crown by use of Jenkins' low fusing body.

E. DARWIN REED, D.D.S., *Sec'y.*



New York College of Dentistry, Class of '91.

On January 14 a representative gathering of the class of '91, N. Y. C. D., sat down to the festive board at the Hotel St. Denis, and once more renewed the ties and friendships formed in the old Twenty-third street building.

A most enjoyable evening was spent, and it was decided to hold the dinner annually on the first Saturday night of each February. D. C. Baker was elected chairman of the dinner committee for 1906.

W. D. PROVOST, *Chmn.*

The Fraternal Dental Society of St. Louis, Mo.

At the annual election of the Fraternal Dental Society of St. Louis, December 20, 1904, the following officers were elected for the ensuing year: President, Burton Lee Thorpe; vice-president, E. P. Dameron; secretary, S. H. Voyles; treasurer, W. E. Brown; executive committee, E. E. Haverstick, W. L. Whipple, T. G. Donnell. S. H. VOYLES, *Sec'y.*

3201 Washington avenue, St. Louis, Mo.

Vermont State Board of Dental Examiners.

The new Board was appointed December 1, and is as follows: Geo. F. Cheney, D.D.S., St. Johnsbury, 5 years; K. L. Cleaves, D.D.S., Montpelier, 4 years; L. E. Mellen, D.D.S., Middlebury, 3 years; E. O. Blanchard, D.D.S., Randolph, 2 years; J. Holmes Jackson, D.D.S., Burlington, 1 year.

National Association of Dental Faculties.

The annual meeting of the N. A. D. F. will be held at Buffalo, commencing at 2 p. m. on Thursday, July 27, 1905. The Executive Committee will meet at 10 a. m., same day. Special business to come before the N. A. D. F. is the consideration of the proposed revision of the constitution and by-laws.

J. B. TILESTON, *Chairman Ex. Committee.*

JOHN I. HART, *Sec'y.*

Central Michigan Dental Society.

The annual meeting of the Central Michigan Dental Society will be held at Lansing, Mich., March 28 and 29. You are cordially invited to attend, as we anticipate a pleasant and profitable meeting. Banquet, March 28th.

S. A. HORNING, D.D.S., *Sec'y.*